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Newsprint Usage Restrictions Off October 1

WPB Announces Order L-240 Will Only Be Relaxed — Canadian Official Opinion Holds Repeal Unwise Until January, 1946—Over-All Requirements of Print Paper Now Aggregate 923,053 Tons.

WASHINGTON, D. C., September 19, 1945—Relaxation of newsprint usage restrictions under Limitation Order L-240 October 1, and the revocation of the order on December 31, 1945, were unanimously recommended by the Newspaper Industry Advisory Committee, the Printing and Publishing Division of the War Production Board announced today.

After a two-day session, during which data on the continuing short supply of newsprint were given, the committee recommended that, although some relaxation of the order may be possible, remaining controls respecting newsprint use should be rigidly enforced during the existence of L-240.

Canada has indicated its ability to increase its shipments of newsprint to United States users by 30,000 tons during the fourth quarter, but assurance of such additional supply depends on continuation of existing controls until the end of the year, WPB officials said.

Forest Products Bureau officials said that although it was the desire of WPB to remove all its remaining orders, including L-240, as soon as possible, it welcomed the recommendations of the industry, since it was WPB's and the printing and publishing industries' responsibility to insure an orderly and equitable transition from wartime control orders. Canadian officials had stated that repeal of Order L-240 before December 31, 1945, would produce a chaotic condition that might impede efforts to increase production and lead to serious maldistribution in the fourth quarter.

Specifically, the advisory committee recommended the following to WPB:

1. Effective October 1, 1945, relaxation of consumption quotas. This recommendation, if adopted by WPB would change the sliding scale of percentage reductions applicable to the various tonnage brackets as follows:

From 3% to 2% on the tonnage between 25 and 125 tons

From 6% to 4% on the tonnage between 125 and 250 tons

From 9% to 6% on the tonnage between 250 and 500 tons

From 15% to 10% on the tonnage between 500 and 1,000 tons

From 18% to 12% on the tonnage over 1,000 tons.

2. Cancellation of all unfilled orders for newsprint on manufacturers books as of September 30, 1945.

3. If there is an over-order situation in November for December delivery, impose a uniform percentage cut in such deliveries, so that there will be no unfilled orders at the end of the year.

4. Arrange with United States, Canadian and Newfoundland newsprint producers, through proper authorities, for a regular monthly check on individual orders.

5. Make clear to users of newsprint under L-240 the necessity and advisability of taking immediate action, consistent with the anti-trust laws, for a program by industry that will deal with the problems that will arise after the discontinuation of the newsprint order.

6. Revoke L-240 Dec. 31 irrespective of any Second War Power Act extension.

Newsprint imports from Canada as usual will form the major proportion of U. S. newsprint supplies in the fourth quarter. They amount to an anticipated 690,000 tons, an increase of 30,000 tons over the third-quarter commitments. United States mills are expected to produce 187,000 tons and Newfoundland is expected to contribute 40,000 tons, WPB officials reported. This totals 917,000 tons against total current requirements of 885,000 tons based on the present sliding scale of reductions. However, the Canadian authorities have estimated that on September 30 there will remain a total of 20,000 tons of deferred orders from United States customers in excess of the agreed Canadian deliveries and that in addition, 18,000 tons of scheduled newsprint production was not manufactured in Canada because of the V-J Day holiday.

The over-all requirements for the next three months are estimated as follows:

U. S. Newspaper Publishers Delivery Quotas under L-240	In Tons 786,723
Other Commercial Users of Newsprint	75,330
Deferred Excess Orders Outstanding September 30	38,000
Army and Navy	3,000
Foreign Economic Administration	17,000
Office of War Information, State Department and others	3,000
	923,053

WPB officials pointed out that the relaxation of L-240 recommended by the committee in the fourth quarter will require 46,500 additional tons of newsprint and that it may therefore be necessary, if this recommendation is adopted, to require a percentage reduction in fourth-quarter delivery quotas to bring orders into balance with available supply. The committee's recommendations are receiving the considerations of WPB officials and their decision will be announced shortly it was stated.

Canada To Allocate More Newsprint to U. S.

Monthly Average For America Will Total 230,000 Tons In Last Quarter—Production Steadily Increasing—Labor Still A Problem —Forestry Concessions To Be Redistributed — Other Late News.

MONTREAL, Que., September 17, 1945—The War-time Prices and Trade Board has announced that for the second time since the collapse of Germany the allocation of Canadian newsprint to United States publishers will be increased, this time 10,000 tons a month in the last three months of 1945, and a proportionate increase will benefit Canadian publishers. The Board also announced that decision would be reached within the next two months on total relaxation of the war-time controls.

This means that the monthly average of newsprint exported to the United States will total 230,000 tons a month through October, November and December, taking up a total of 690,000 of the 879,000 tons expected to be produced in that period. Canadian publishers have been drawing an average of about 16,500 tons monthly over the last few months. At the same ratio as the U. S. increase, that would mean about 750 tons more a month in Canada.

Commenting on Washington reports that all controls by the United States Government likely would be abolished December 31, A. F. W. Plumptre, secretary of the Prices Board, said:

"Similar action in Canada would not necessarily follow. What happens after the end of the year is still subject to discussions between ourselves and United States authorities. Any action taken in the United States naturally has an influence on what we do here regarding newsprint.

"However, our situation is somewhat different. We have responsibilities to other countries as well."

In announcing the increased appropriations, it was stated by the Prices Board that as of September 30, there would be an estimated deficit or carryover of orders over supply of 38,000 tons. Of this, 20,000 tons represented orders from United States' customers in excess of the agreed allocation to the United States and 18,000 tons represented loss of scheduled production because of the V-J Day holiday. It was stated this 38,000 tons had to be made up out of the fourth quarter supply for the United States or by cancellation of unfilled orders.

Production Steadily Increasing

The federal Bureau of Statistics has disclosed that Canada's newsprint industry made up 75.1% of the North American production of 3,984,383 tons in 1944. The Canadian total was 3,039,783 tons, valued at $165,655,165, a decrease of 0.2% in tonnage, but an increase of 8.2% in value over 1943. The newsprint tonnage represented 75.2% of the total reported tonnage of Canadian paper manufacturers in 1944.

The Newsprint Association of Canada reports that the output of newsprint in Canada for the first eight months of 1945 was 2,102,181 tons, as compared with 1,805,669 tons in the similar period of 1939, an increase over the last pre-war year of 16.4 per cent. The exports of newsprint in 1944 reached 2,805,776 tons, valued at $157,190,834.

Carton Priority to be Abolished

The Prices Board has further announced that the priority system established in the shipping case industry will be abolished October 1. The order, in effect since 1943, gave first priority on purchase of corrugated and solid fiberboard cartons to some Government departments, Crown companies, and the Red Cross; second priority for organizations working on war contracts; and third priority to users of containers for essential food products.

Government orders for such containers have naturally taken a big drop, but increasing orders for peacetime uses, together with a substantial backlog of orders for civilian consumption, give promise that manufacturers will continue to operate at capacity for the next year or so. Undoubtedly the manufacturers will serve a much wider field than before the war, for due to the many innovations in paperboard packaging adopted during the war, a new occupation, that of package engineering, with paper products as the base, has grown up in Canada, just as it has in the United States.

Labor Still a Problem

In all phases of the pulp and paper industry labor is still a problem. While some manufacturers report steady improvement, some maintain that the situation is as bad as ever. A survey of general industrial conditions shows that employers generally look forward to average monthly employment a year hence at only 2.1% less than the peak year of 1943 and 22.2% more than in 1939.

Hon. C. D. Howe, Minister of Reconstruction, told a committee of labor men who met him a day or two ago that he had just received a 'phone call stating that a new paper mill could use 1,000 mechanics at pay rates ranging from 80 cents to $1.10 an hour but "they could not be found." He added: "Also we cannot get replacements for 6,000 prisoners of war working in the pulp and paper industry."

Quebec Co. Stock More Active

Strength on the stock market during the past week of preferred stock of Quebec Pulp and Paper Company, of Chicoutimi, Que., has revived the report that there is a purchaser for the properties and assets of the company, which was placed in bankruptcy in 1942 by the Quebec Government on claims of $1,824,000, mainly for water rentals. The company owns a 350-ton ground wood pulp mill which has been idle for the past 13 years. The company's timber limits contain 5,000,000 cords of pulpwood, and it has a power site of 36,000 h.p. developed.

Reclassification of Newsprint Shipments

The Newsprint Association of Canada, in reporting on this month's production and shipment of newsprint, states that in the first seven months of this year certain shipments of Canadian origin, destined for liberated countries, were reported as shipments to the United States and to Canada because they were procured by the United States and Canadian government agencies. Such shipments have now been reclassified as shipments to overseas, and for August the table of overseas shipments has been revised accordingly. This table shows that in August Canadian shipments

(Continued on page 24)

Consolidated Announces Expansion Program

Construction To Include Two Buildings To House New Paper Machines and Modern Steam Generating Plant — To Complete Marathon Pulp Mill Next June — Mosinee Starts Improvements.

APPLETON, Wis., September 17, 1945—A $2,000,000 expansion program at the Biron, Wis., division of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., was announced Tuesday, September 11, by George W. Mead, president.

It embodies construction of two buildings to house a new paper machine and a modern steam generating plant. The project is expected to get underway within 10 days. The steam plant is scheduled to be completed about March 1, 1946, and the machine is expected to be placed in operation by January 1, 1947. At least 100 employes will be added to the payroll, Mr. Mead said.

Plans for the new machine to make paper suitable for 4-color printing were begun by engineers early in 1944 and are ready for the Rice, Barton and Fales Corporation of Worcester, Mass., to begin construction immediately, Mr. Mead's announcement said.

Among innovations included in the design of the machine is the enclosure of dryer gears and their operation in oil baths, so that there will be little noise other than the hum of suction between the paper and the rolls.

The new machine will effect a considerable increase in production of Consolidated's high grade publication papers, beyond that already assured by the recent purchase of the mill at Stevens Point, Wis. The new machine will be equipped with the company's patented coating apparatus which will be made by the Nekoosa Foundry and Machine Works, Inc., Nekoosa, Wis. The Beloit Iron Works, Beloit, Wis., will make some parts for the machine, and a 150-inch super-calender will be supplied by the Appleton Machine Company, Appleton, Wis. General Electric will install the drive for the entire machine; which will run 1,200 feet per minute, trimming 136 inches width and produce more than 100 tons of book paper per day.

Housing the machine will be a structure 84 by 440 feet to be erected each of the mill and adjoining the present No. 3 machine. New beaters will be added and the coating preparation plant enlarged to take care of the increased demand. Production of ground wood will be increased by widening the grinders to handle 33-inch wood instead of the 24-inch blocks now used.

The present steam plant will be scrapped and a new boiler house will be constructed south of the mill. The building will be 78 by 104 feet and will contain three new Babcock and Wilcox boiler units, each to carry 400 pounds of pressure, and equipped with steam generating auxiliaries to produce 180,000 pounds of pressure an hour. There will be one 5,000 kilowatt non-condensing steam turbine.

The company's construction department will erect the buildings with excavation for the boiler plant scheduled to be started during the current week.

The company had notified its stockholders that the adjourned annual meeting, from August 3 to September 12, would be held for the purpose of authorizing the issuance and sale of $4,000,000 in preferred stock to finance in part a program for expansion of production facilities but directors have since decided to finance the program with a 10-year term bank loan in the form of debentures. The meeting, therefore, has been adjourned indefinitely, Mr. Mead declared.

To Complete Marathon Mill Next June

Completion of the new bleached sulphate pulp mill and townsite of Marathon on Peninsula Bay, Ontario, Canada, for the Marathon Corporation is expected by next June, according to John Stevens, Jr., vice president of the Marathon Corporation.

Lester J. Smith Heads Northwest Division

Lester J. Smith, Kaukauna, Wis., manager of the Combined Locks Paper Company mill at Combined Locks, Wis., was elected president of the Northwest division of the American Pulp and Papermakers Association at a recent meeting at Rhinelander, Wis.

Representatives of the paper industry were present from Wisconsin, Michigan, Minnesota and neighboring states. R. N. Nugent of the Nekoosa-Edwards Paper Company, Nekoosa and Port Edwards, Wis., was elected first vice chairman; Sig Eckman, Rhinelander, Wis., second vice chairman, and Frank Kreiling of the Kaukauna Corporation, secretary and treasurer.

R. M. Radach of the Appleton Machine Corporation, Appleton, Wis., was toastmaster at the evening meeting, and Folke Becker, president of the Rhinelander Paper Company, discussed "The Problems Confronting the Paper Industry Today."

Kimberly-Clark Agrees to Contract

After a bargaining session from September 5 through September 11 at Neenah, Wis., between the Papermill Workers Union of Kimberly, the Niagara Papermill Workers Union of Niagara, Wis., and the Atlas and Kimlark mills of Appleton and Neenah, Wis., Kimberly-Clark Corporation has agreed to a contract which it is reported will increase its payroll in the mills mentioned by upwards of a quarter million dollars.

The new contract as of October 1 calls for an increase of 3 cents per hour for hourly paid employes, making the base rate 74 cents per hour. Double time will be allowed for work done on Sundays, Christmas, Labor Day and July 4, and time and a half for work holidays such as New Year's day, Memorial day and Thanksgiving day.

A bonus of 10 cents per hour for the last 12 hours of an established work day, for tour, shift, and night work occupations has been adopted, instead of the present 3 cents for around the clock.

The vacation policy will be one week for one year of service and 2 weeks of vacation for employes who have five years of service with the corporation. The date of hire will be used in computing eligibility for vacations.

The corporation also agreed to count holidays not worked as days worked in determining the fair labor standards act overtime for six holiday weeks, to set aside $25,000 for inter-plant inequities; and to extend its accumulated feature in the 5-day sick leave plan for 15 days.

BULLETIN!

How to Take a

Reconversion Inventory

of Your V-Belt Drives

☛ As manufacturing equipment becomes more widely available, and as you reconvert your production toward a peacetime basis, you may be faced with an unprecedented problem of inventory-taking.

☛ You may have to determine—more quickly than such a job has ever been done before—the EXACT CONDITION of every piece of existing equipment that you propose to use in peacetime production.

☛ Here are suggestions to speed your inventory of V-belt drives. The standards stated here will let you determine which of your *belt sets:* (1) are okay as is; (2) will shortly require replacement; (3) need immediate replacement. You should be able to place *sheaves* in the same categories, or in a fourth: (4) are obsolete . . . a common failing of sheaves, now that "Magic-Grip" and Vari-Pitch Sheaves are becoming more readily available. Or you may decide that entire *drives* belong in a fifth classification: (5) need re-engineering . . . either to correct misapplications forced by wartime shortages, or to take advantage of new developments such as Allis-Chalmers' Variable Speed Drives, with either Stationary or Motion Control.

1 START YOUR INVENTORY WITH THE RECORDS

Your records will reveal much that will be of value to you in appraising your present multiple V-belt drive equipment and in establishing its place in reconverted production.

Purchase records should show which drives have required new belts too frequently. While there's no overall rule to tell you how long a belt should last, it's safe to assume that *whenever you spot a drive* whose belts wear out *much* more rapidly than all the others, *you've found a place* where a change will save you money.

Maintenance records and *machine operating records* will reveal useful facts. Is a machine often down while belts are replaced? While sheaves are changed? Then there's room for improvement. Check trouble spots *first.* You can spot these trouble spots if you'll *start with the records.*

2 THEN CHECK DRIVE ENGINEERING

V-belt wear will be excessive — too costly for competitive peace-time operation — unless the drive is tailored to its particular power transmission job in the following respects:

Diameters—Depending on the thickness of its section, every V-belt has an "easy arc". Bend it more sharply (around a sheave of too small diameter) and the internal friction of excess flexing will cook the life out in far too short a time. In general, minimum sheave diameters for belts of given section are as follows: A—3.0"; B—5.4"; C—9.0"; D—13.0"; E—21.6".

Centers—The shorter the centers in a drive, the fewer feet of belt that can stretch—the lower the potential stretch to threaten slippage and crack-the-whip action. Thus proper engineering aims at short centers. (Short centers have the further advantage of saving valuable floor space . . . an important consideration in many factories.) In every re-application of V-belt drives for reconverted production, remember . . . *keep centers as short as possible.*

Number and size of belts — Each V-belt is rated for horsepower; simple mathematics will tell you how many of what size you'll need for a given job. When reconverting, it's wise to *check this again* . . . the war has produced many undesirable makeshifts. Remember, though, that number and size don't tell the whole story—*speed counts too.*

Belt speed—Just as a truck's motor can pull a heavier load by traveling faster, so a set of V-belts can pull a heavier load by traveling faster. In a truck, it's a case of using a "lower" gear. In a V-belt drive, it's the same . . . using larger sheaves which have a higher rate of rim travel, thus producing higher belt speed. See the V-belt manufacturer's catalog for limits of speed recommended for any given belt.

Contact arcs—All horsepower ratings for V-belts are based on a 180 degree arc of contact with sheaves. However, this factor varies from one drive to the next—depending on its ratio and centers—and must be carefully considered in re-engineering any drive.

Tension—Each drive should be equipped with an effective tension adjustment. Belts that are too loose will slip, rub on the groove walls, heat up, and have the life cooked out of them. And when the wave curve in a loose belt whips it *tauter* across the tension

side of the drive—that belt grabs at the load, may snap. So—in checking V-belt drives for reconverted production, it's important to see to it that each set of belts has proper tension. The easiest and quickest rule-of-thumb test for proper tension is this: "A slack V-belt feels dead when you thump it with your hand; a properly taut V-belt has an alive springiness."

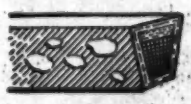
Alignment—Unless the shafts of the driving and driven sheaves are *parallel*, it's impossible to put *all* belts in the set at proper tension . . . and all belts run at an angle, rubbing on the groove walls, heating themselves for an early death. In reconverting for a competitive production, check parallelism of shafts . . . and check too to see that *sheave grooves* are *in line*. Out-of-line sheaves also subject belts to needless rubbing on the groove walls.

If any of your V-belt drives is notably weak in any of the above seven points, consider re-engineering the drive.

3 THEN INSPECT V-BELTS

Your inventory of working V-belts will reveal far more than just their condition; it will also show what should be done to correct existing conditions that promote V-belt wear—an important consideration in cost-conscious, competitive production. Check every belt in every set for the following tell-tale signs; note condition of belt, cause, and recommend cure.

Checking these points is especially important if you're planning a *continuous* operation where belt breakage would be fatal. You can spot about-to-break belts by looking for:



SCUFFING—*Cause*: Bolts protruding inside the guard may do this. Such scuffing can exert enough "braking" to cause sudden snap and break belt.

Cure: When placing guards or steelwork near drives, anticipate some sag . . . leave enough clearance.

SLIP BURN—*Cause*: Belt too loose to pull its load. Belt stands still, rubbing on spinning driving sheave, heating and melting the rubber.

Cure: Keep belt taut, and sheave grooves free of oil and grease. Check machine for overload.

OIL-SWELLING—*Cause*: Belt is is swelled and weakened by chemical action of oil.

Cure: Provide splash guards, or use Oil-Resisting or Oil-Proof Texrope Belts.

ABRASION—*Cause*: Abrasive dust wears the sidewalls, narrowing belt width. Then belt slips, rides on bottom of groove.

Cure: Provide dust guards, keep proper tension.

4 CHECK BELT ENGINEERING

Because Allis-Chalmers belt development during wartime followed the familiar pattern of many industrial achievements—moving swiftly and outmoding many previously-acceptable types—it is *not* wise policy to replace belts by blindly ordering the same kind used in the old installation. Belts have become specialized for better economy, safety and dependability. It is time now to take a look at qualities of the new belts, and to take advantage of the special properties they have been given through use of new synthetics in their manufacture.

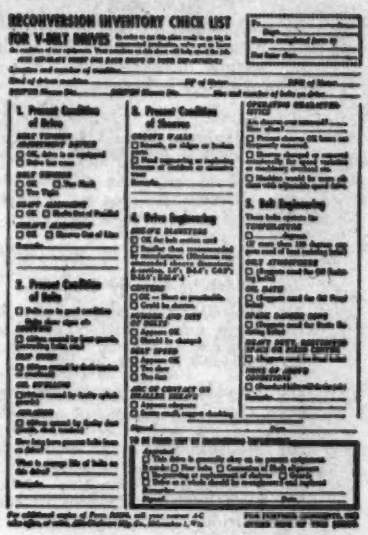
NOTE: THE MATCHED-SET PRINCIPLE—When one or two V-belts in a set are worn out or damaged, remember that the remaining V-belts have stretched beyond their original length, making it impossible to put proper tension on an old set to which *new* belts have been added. Adding new belts is therefore likely to be false economy . . . the new belts will overwork, lasting for only a fraction of their normal life. Rather than throw good money after bad, always install a complete, scientifically-matched set, storing old belts to use as replacements in other old sets.

5 INSPECT SHEAVE WALLS

For smoothness—What makes a V-belt grip the sheave? Not mere surface friction, but the *wedging* action of the bending and expanding belt. So sheave grooves may be smooth . . . *should* be smooth, to minimize belt wear. Watch out for ridges or burrs in the groove walls; if they're bad, re-groove or replace the sheave. Increased belt life will soon pay the cost.

For straightness—The sides of the V should be *straight;* if they're not, drive won't be truly efficient, belt life will be short. Some sheaves—misaligned or in hard usage—get "shoulder wear" in groove walls. Lay a straight-edge against the wall, look for a light gap. If you find hollows deeper than the thickness of a playing card, sheave needs truing.

REPLACE? OR REGROOVE? You'll have to make this decision. Note this: where small, inexpensive stock size sheaves show need for re-truing of grooves, time and trouble can often be saved by scrapping them and replacing with new sheaves. It may pay out, however, to re-groove special or large-diameter sheaves, or to return them to the factory, where a nominal charge is made for this service.



RECONVERSION INVENTORY CHECK LIST FOR V-BELT DRIVES

Ask A-C for sample copies of this V-Belt Drive Inventory Check List.

CENTRIFUGAL PUMPS, ELECTRIC MOTORS NEED INVENTORY TOO!

All three of these common industrial units — V-belt drives, centrifugal pumps, and electric motors — are covered in Allis-Chalmers' new *Reconversion Inventory Kit*. No big package, this Kit is simply a set of Fact Sheets and Check Lists, with suggestions for Inventory procedure as outlined on these pages but in slightly more detail. A 1894

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ALLIS A-C CHALMERS

Congressional Committee Opens Paper Bids

Proposals For Supplying the Government Printing Office With A Variety of Paper For the Three Months' Period Beginning January 1 Are Received Monday—To Consider the Awards September 24.

WASHINGTON, D. C., September 17, 1945—Bids were opened on Monday by the Joint Congressional Committee on Printing for paper for the use of Government Printing Office for the three-months period beginning January 1, 1946. As has been the case quite commonly of late when proposals were advertised for supplying the Government Printing Office with paper for three-months and six-months periods, no bids were submitted on quite a few items. In cases of this kind, the paper will, as usual, have to be purchased on the open market. The committee will meet September 24 to consider awards. The bids received today were as follows:—

Newsprint

No. 1—2,500,000 lbs., 24x36—64; rolls, 19, 24, 36 and 48 ins. wide (3-inch fiber cores, weight of cores and wrappers shall be included in net weight).
No Bid.

Telephone Book News

No. 2—900,000 lbs., 24x36—45; rolls, 28, 38 and 48 ins. wide (3-inch fiber cores). (Weight of cores and wrappers shall be included in the net weight.)
Cauthorne Paper Co. Inc. .....
(500,000 lbs. only) 5.38c

Machine-Finish Book

No. 3—100,000 lbs., 25x38—70; flat, cut any size, min. 21 ins., max. 48 ins.
Barton, Duer & Koch Paper Co...
(total 200,000 lbs. only for lots 3 through 10 incl.) 7.97c

No. 4—350,000 lbs., 25x38—70; flat, cut 24x38, 28x38, and 38x48 ins.
Barton, Duer & Koch Paper Co... 7.97c

No. 5—350,000 lbs., 25x38—70; flat, cut 24x38, 28x38, and 38x48 ins.
Barton, Duer & Koch Paper Co... 7.95c

No. 6—200,000 lbs., 25x38—70; rolls, 28½ ins. wide (3-inch fiber cores).
Mudge Paper Co. .....
(200,000 lbs. only) 7.59c
Barton, Duer & Koch Paper Co. . 7.55c

No. 7—300,000 lbs., 25x38—70; rolls, 19 and 38 ins. wide (3-inch fiber cores).
Mudge Paper Co. .....
(200,000 lbs. only) 7.59c
Barton, Duer & Koch Paper Co. 7.55c

No. 8—300,000 lbs., 25x38—70; rolls,
Mudge Paper Co. .....
(200,000 lbs. only) 7.59c
Barton, Duer & Koch Paper Co... 7.55c
19 and 38 ins. wide (3-inch fiber cores).

No. 9—200,000 lbs., 25x38—70; rolls, 24, 36, and 48 ins. wide (3-inch fiber cores).
Mudge Paper Co. .....
(200,000 lbs. only) 7.59c
Barton, Duer & Koch Paper Co... 7.58c

No. 10—400,000 lbs., 25x38—80; flat, cut any size, min. width 24 ins., max. width 48 ins.
Barton, Duer & Koch Paper Co... 7.40c
Mead Sales Co. 7.46c

Offset Book

No. 19—500,000 lbs., 25x38—80, flat, cut any size, min. width 24 ins., max. width 48 ins., the grain to run lengthwise of the sheet.
Central Ohio Paper Co. .....
(150,000 lbs. only lots 19 or 20) 9.27c
Paper Corp. of America 9.27c

No. 20—2,500,000 lbs., 25x38—100; flat, cut any size, min. width 24 ins., max. width 48 ins., the grain to run lengthwise of the sheet.
Central Ohio Paper Co. .....
(150,000 lbs. only lots 19 or 20) 8.13c

Offset Poster

No. 21—500,000 lbs., 25x38—100 and 120; flat, cut any size, min. width 24 ins., max. width 48 ins., the grain to run lengthwise of the sheet.

50% Antique Book

No. 26—100,000 lbs., 25x38—80; flat, cut 32x48 and 38x48 ins.
Whitaker Paper Co. 17.10c

Supercalendered Book

No. 34—400,000 lbs., 25x38—90; rolls, 28½ and 38 ins. wide (3-inch fiber cores).
R. P. Andrews Paper Co. .....
(400,000 lbs. only) 7.33c
Mudge Paper Co. 7.34c

Machine-Coated Book

No. 37—300,000 lbs., 25x38—90; flat, cut any size, min. width 24 ins., max. width 48 ins.
Barton, Duer & Koch Paper Co. .. 6.32c

No. 38—200,000 lbs., 25x38—100; flat, cut any size, min. width 24 ins., max. width 48 ins.
Barton, Duer & Koch Paper Co. .. 5.87c

No. 39—200,000 lbs., 25x38—120; flat, cut any size, min. width 24 ins., max. width 48 ins.
Barton, Duer & Koch Paper Co. .. 5.87c

Coated Book

No. 41—300,000 lbs., 25x38—140; flat, cut 32x42, 38x48, 39x50, and 41x52 ins., the grain to run lengthwise of the sheet.
Consolidated Water Power & Paper Co. 6.565c

Litho Coated Book

No. 41-1—50,000 lbs., 25x38—140; flat, cut 32x42, 38x48, 39x50 and 41x52 ins.; the grain to run lengthwise of the sheet.
No Bid.

Ground Wood Mimeograph

No. 44—500,000 lbs., No. 36; flat, cut 32½x42½, and 38x48½ ins., grain as ordered.
R. P. Andrews Paper Co. 5.74c
Resolute Paper Products Corp. ... 5.7375c
6.3875c
Mudge Paper Co. 5.73c
Old Dominion Paper Co. 5.7494c
National Pulp & Paper Co. 5.75c
Stanford Paper Co. 5.75c
Perkins-Goodwin Paper Co. 5.725c

Chemical Wood Mimeographed, White and Colored

No. 45—500,000 lbs., white, No. 36; flat, cut 32½x42½ and 38x48½ ins.; the grain to run as ordered.
R. P. Andrews Paper Co. .....
(200,000 lbs. only) 7.24c

No. 46—100,000 lbs., blue, buff, green, pink and yellow, No. 36; flat, cut 32½x42½ and 38x48½ ins., the grain as ordered. Min. order, one color, 10,000 lbs.
Cauthorne Paper Co. Inc. 8.35c

25% Mimeograph

No. 47—600,000 lbs., No. 36; flat, cut 32½x42½; 34½x44; and 38x48½ ins.; the grain to run as ordered.
Old Dominion Paper Co. .. .. ..
(200,000 lbs. only) 10.18c
Aetna Paper Co. ....
(200,000 lbs. only) 9.93c

Duplicator Copy Paper, Liquid Process, White and Colored

No. 48—300,000 lbs., No. 40; flat, cut 32x42 and 34x44 ins.
Eastern Corp. 9.60c

No. 49—100,000 lbs., pink, yellow, green and blue, No. 40; flat, cut 32x42 and 34x44 ins.
Eastern Corp. 10.33c

Blue U S M O Safety Writing

No. 50—150,000 lbs., No. 32; rolls, 22 ins. wide, 24 ins. in diameter (3-inch fiber cores).
R. P. Andrews Paper Co. 12.83c
D. L. Ward Co. ....
(50,000 lbs. only) 12.79c

Chemical Wood Writing, White and Colored

No. 55—4,000,000 lbs., white, No. 32; flat, cut any size, min., width 21 ins., max. width 48 ins.
R. P. Andrews Paper Co. .....
(200,000 lbs. only) 7.82c
Stanford Paper Co. .....
(500,000 lbs. only) 7.87c

No. 56—3,000,000 lbs., white No. 36; flat, cut any size, min. width 21 ins., max. width 48 ins.
No Bid.

No. 57—2,000,000 lbs., white, No. 32; rolls, min. width 16 ins., max. width 48 ins. (3-inch fiber cores).
R. P. Andrews Paper Co. .. ...
(450,000 lbs. only) 7.59c
Mudge Paper Co. ....
(200,000 lbs. only) 7.615c

No. 58—1,000,000 lbs., white, No. 36; rolls, min. width 16 ins., max. width 48 ins. (3-inch fiber cores).
No Bid.

No. 59—500,000 lbs., blue, buff, green, pink, salmon and yellow, Nos. 32 and 36; flat cut any size min. width 21 ins., max. width 48 ins. Min. order, one color, 10,000 lbs.
No Bid.

No. 60—150,000 lbs., blue, buff, green, pink, salmon, and yellow, No. 32; rolls, 38 ins. (3-inch fiber cores).
No Bid.

Chemical Wood Writing (Titanium Dioxide Filled)

No. 61-2—1,000,000 lbs. No. 32; flat, cut 34x44 ins.
Barton, Duer & Koch Paper Co. ..
(500,000 lbs. only) 8.83c

High Wet Strength Map

No. 63—416,000 lbs., No. 48; flat, cut any size, min. width 22 ins., max. width

(Continued on page 26)

KATHANODE
Glassklad since 1925

DURAPOR (Rubber) SEPARATOR

•

UNIT-SEAL (Rubber) ENVELOPE

•

SPUN GLASS RETAINER MAT

•

BLACK OXIDE ACTIVE MATERIAL

•

KATHANODE POSITIVE GRID

First American battery to use glass protection, Kathanode has had twenty years of unqualified success in powering electric industrial trucks. Behind it are two decades of constructive research—research that has developed:

Kathanode grid, exposing a minimum of surface area yet with ample cross-section for electrical conductivity.

Black Oxide, the unique active material with the regenerative pure lead core.

Spun glass mat, of exclusive layered design that positively retains useful active material.

Unit-Seal envelope, with open ends and solid edges to prevent treeing of spent material.

Durapor separator, of deeply ribbed and highly porous rubber construction, with great mechanical strength.

This research is constant; so look to Gould for leadership in storage battery developments.

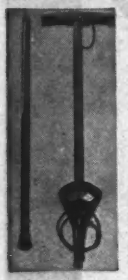
Add Kathanode, the best battery power for propulsion and lifting, to the advantages of electric industrial trucks. Write Dept. 59 for Catalog 100 on Kathanode Glassklad Batteries for Industrial Truck and Tractor Service.

GOULD

PIONEER OF GLASSKLAD CONSTRUCTION

IS THIS THE PICTURE-GRAPH OF YOUR

DRYING ROLL TEMPERATURES?



The maintenance of proper progressive temperatures in the train of drying rolls will go a long way to prevent spots, curl, cockle and blisters. We suggest the routine use of the Cambridge Surface Pyrometer for such temperature determination. It is an accurate, sturdy, quick-acting instrument ideally suited for temperature check of still or moving rolls. Write for bulletin 194-S.

The *Cambridge* is made in a hand model and with an extension to reach those hard-to-get-at places.

CAMBRIDGE INSTRUMENT CO., Inc.
3702 Grand Central Terminal
New York 17, N. Y.

CAMBRIDGE
SURFACE PYROMETERS

Aridifiers Now Available

Aridifier air cleaners are available without priority. Aridifiers remove contamination, moisture, dirt, oil and fine scale from compressed air lines. They increase the efficiency of air operated devices; prevent delays caused by shutdowns and reduce the need for much tool and equipment maintenance.

The Aridifier consists of a non-corroding, nickel alloy housing, containing a vertical shaft concentric, with the air inlet at the bottom and the air outlet at the top. Upon the shaft, mounted on oil-sealed, stainless steel, ball bearings, are four multi-blade rotors or impellers made of durable molded plastic. Adjacent rotors revolve in opposite directions, thus preventing interstices from becoming aligned. The compressed air propels the rotors as it passes through the Aridifier, and as the air circulates through and around the vanes any foreign matter it carries is thrown out of the air stream and drained into a sump. The positive action of the Aridifier assures clean, dry air at the point of use at all times. Manufactured by The Logan Engineering Company, 4900 Lawrence Ave., Chicago, Ill.

P. F. Neumann Promoted

WILMINGTON, Del., September 1, 1945—Appointment of P. F. Neumann as manager of technical service for Hercules Powder Company's paper makers chemical department, was announced today by R. B. McKinney, general manager of the department. Mr. Neumann, who has been associated with Hercules since July, 1937, at the company's Kalamazoo plant, has been in Wilmington at the home office since October, 1944, doing sales-service and development work. Prior to joining Hercules, Mr. Neumann was an instructor in chemistry at Michigan State College, where he took his master's degree in chemistry.

Gaston DuBois Retires

ST. LOUIS, Mo., September 1, 1945—Gaston F. DuBois, vice president and member of the Executive Committee of Monsanto Chemical Company, holder of the Perkin Medal and one of the foremost figures in the American chemical industry for 40 years, retired today. According to a company announcement, he will continue as a Director and will also serve as a consultant to the company.

"NON-USERS ARE THE LOSERS"

PROFIT PRODUCERS

TENAX FELTS

TECHNICALLY SPEAKING—

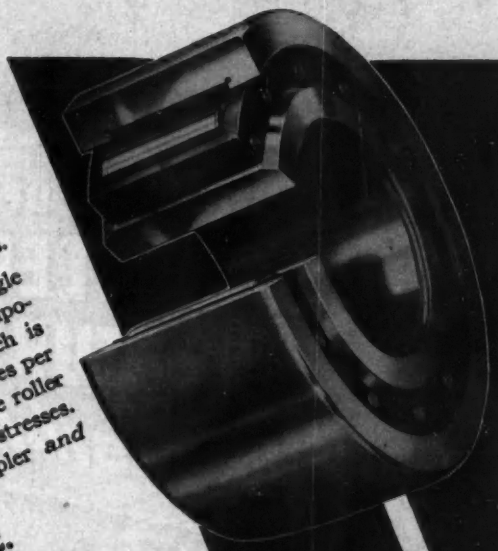
TENAX FELTS are unexcelled in performance. For all types of paper and board, they start right, run smoothly, provide full and true trim with the proper water removal.

Financially speaking, TENAX FELTS assure that wider margin of profit which is so important in times of rising costs.

"Non-Users Are The Losers"

LOCKPORT FELT COMPANY
Newfane, N. Y. — U. S. A.

Choose Right-Angle Loading for Outstanding Performance . . .



● In many applications—particularly in heavy-duty service—Rollway Solid Cylindrical Roller Bearings outlast and outperform other types of bearings. There's more metal to carry the load . . . long line contact with the race . . . and lower unit pressures. A combination that affords from 3 to 5 times the carrying capacity of equal-sized ball bearings.

But that's only half of the story. Rollway Right-Angle Loading splits compound loads into the two simple components of *pure radial* and *pure thrust*—each of which is carried on a separate set of rollers. Total load magnitudes per bearing are lower, and are carried perpendicular to the roller axis. There are no oblique resultants, no complicated stresses. Stress analysis and bearing computations are simpler and more exact.

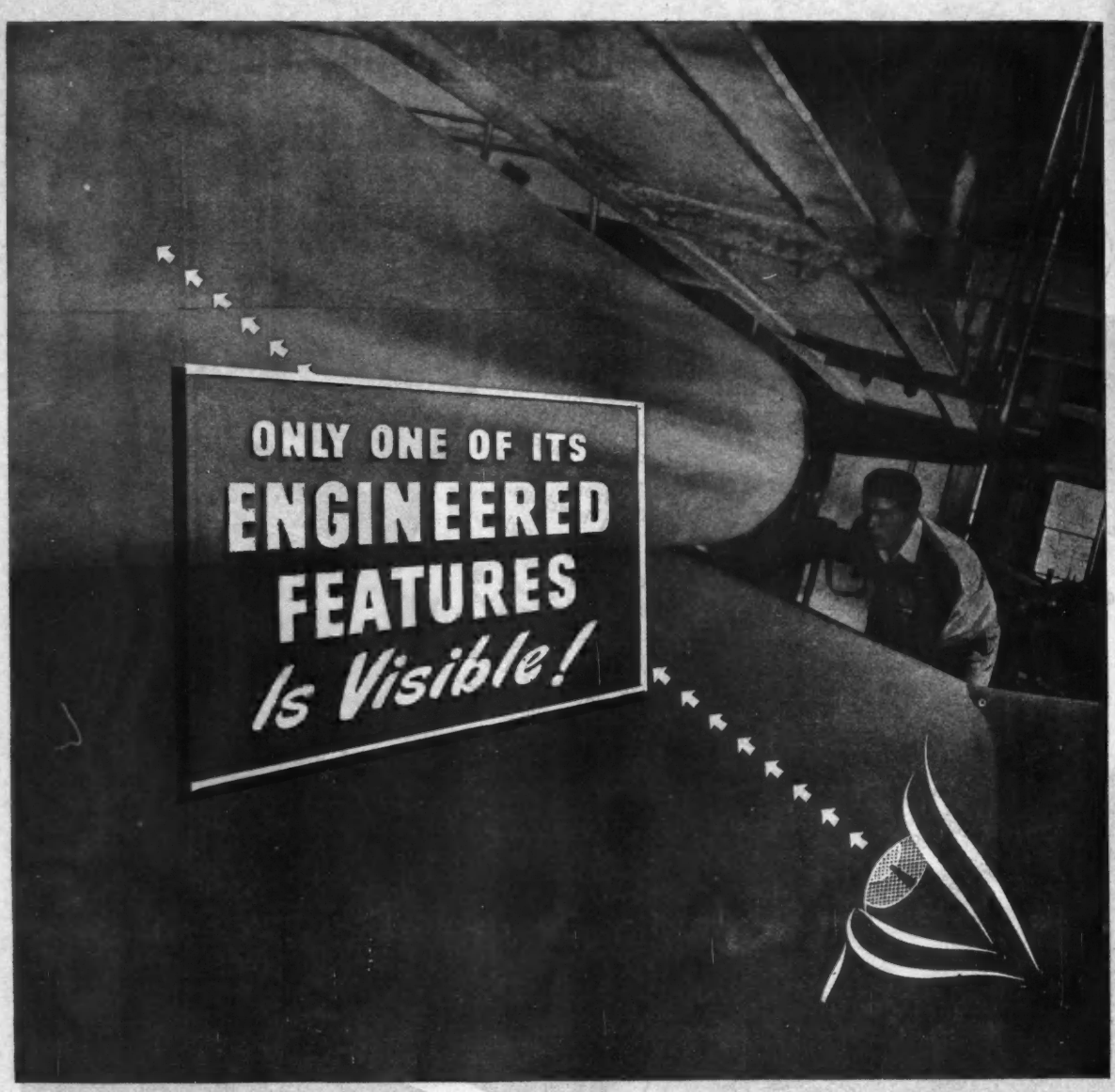
ROLLWAY BEARING CO., INC.
Syracuse, N. Y.

ROLLWAY RIGHT-ANGLE LOADING

● If you haven't a ROLLWAY BEARING CATALOG in your engineering file, write for one today. And ask our engineering specialists to help you in selection of the type and series best suited for your application. Just send a print of your assembly with specification of load, speed and type of service for confidential analysis. No charge. No obligation.

ROLLWAY
CYLINDRICAL ROLLER BEARINGS

SALES OFFICES: Philadelphia • Boston • Pittsburgh • Youngstown • Cleveland • Detroit • Chicago • St. Paul • Houston • Tulsa • Los Angeles



The flawless, gleaming surface of this synthetic rubber press roll is indicative of the technical skill with which every U.S. Rubber roll is fabricated. Beneath this polished finish are all the properties requisite to maximum efficiency and service. You'll find that U. S. Rubber Paper Mill Rolls have all the characteristics you're seeking:

1. *Proper and uniform density*
2. *Maximum resiliency*
3. *Low drift*
4. *Exceptional core adhesion*
5. *Highly polished surface*
6. *Excellent grinding properties*

UNITED STATES RUBBER COMPANY

SERVING THROUGH SCIENCE 1230 SIXTH AVENUE · ROCKEFELLER CENTER · NEW YORK 20, NEW YORK

WORLD'S LARGEST PRODUCER OF SYNTHETIC RESINS

RCI

proving its superiority

in the world's dampest spot

THE WET-STRENGTH RESIN **P-426**

BECKAMINE

There could be no better proof of the efficiency of P-426 Beckamine in imparting wet-strength than its use in the production of diaper paper. And heightened wet-strength is only one result of its use. This urea-formaldehyde resin increases tensile strength, fold and mullin as well. It can be applied directly in the beater, fan pump, or head box—or directly to the sheet at the size press—and it is notable for stability in storage. Ask the RCI Sales Department at Detroit for additional details.

Saturday Evenings at 8:30 (E.W.T.)
You Will Enjoy RCI's
"Symphony of the Americas"
Via Mutual Network Stations

REICHHOLD CHEMICALS, INC.

General Offices and Main Plant, Detroit 20, Michigan

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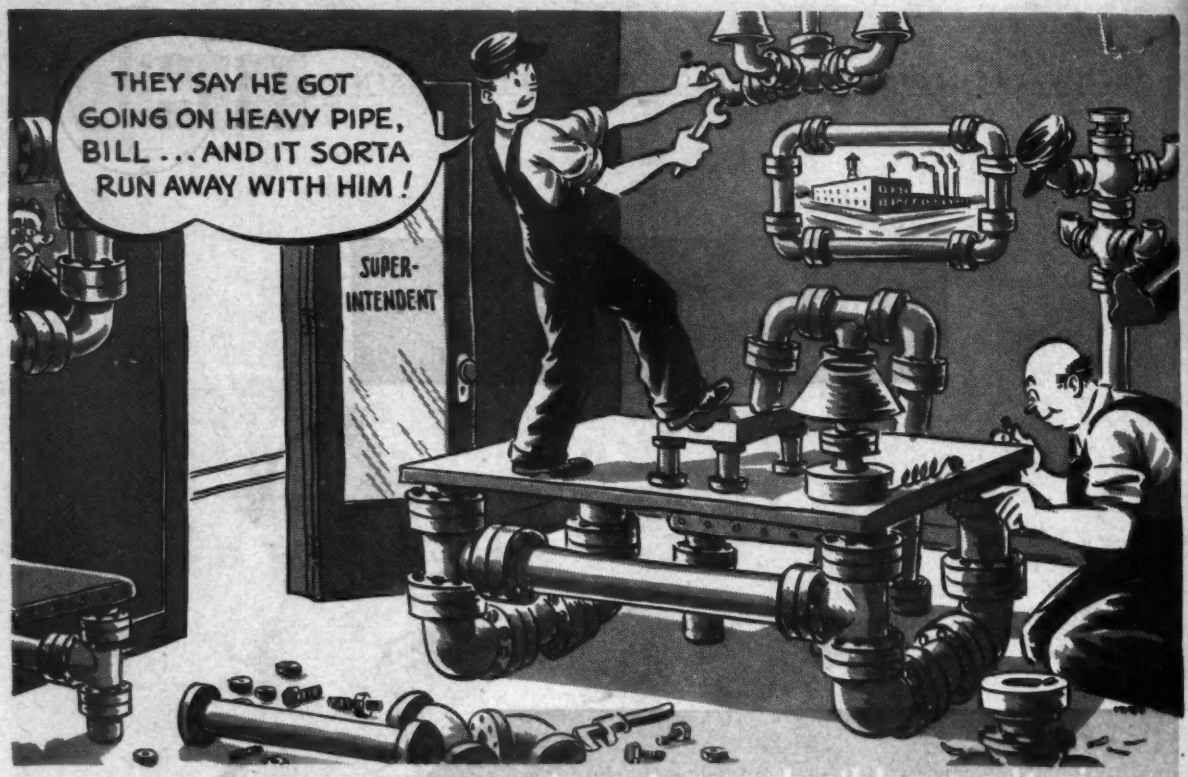
SYNTHETIC RESINS • CHEMICAL COLORS • INDUSTRIAL PLASTICS • INDUSTRIAL CHEMICALS



Have YOU gone too far with heavy pipe?

WHEN we say heavy pipe we don't mean the "Extra Heavy" kind. We just mean the ordinary, everyday "Standard Thickness" pipe that is used for a multitude of services. In relation to *most* of the purposes it serves in *most* plants, it *is* heavy —far heavier than needed!

Miles of this pipe are used for that broad middle range of low and moderate pressure services—services like those listed here. Yet there is a pipe, weighing about half as much, that can handle any of these requirements with strength and service life to spare—a pipe which can often be installed at half the cost of the heavier pipe it so well replaces.

This pipe is Taylor Spiral!

When you use this light but remarkably strong pipe you not only save dollars; you also conserve vital steel. Switching to Taylor Spiral for services like those listed is made easy by the range of sizes and variety of fittings. Thicknesses range from 18 to 6 gauge; sizes from 4" to 42"; joint lengths to 40 ft. All types of end joints and couplings, all kinds of fittings and "specials" or fabricated assemblies are produced by Taylor Forge, assuring a complete service with undivided responsibility.

TAYLOR FORGE & PIPE WORKS

General Offices & Works: Chicago, P. O. Box 485 ★ New York Office: 50 Church St. ★ Philadelphia Office: Broad Street Station Bldg.

CHANGE TO TAYLOR SPIRAL PIPE FOR:

- High and Low Pressure Water Lines
- Low Pressure Steam and Air Lines
- Steam and Diesel Exhaust Lines
- Vacuum and Suction Lines
- Blower Piping
- Sand and Gravel Lines
- Industrial Gas Lines
- Oil and Gas Gathering Lines
- Swing Pipe
- Suray Pond Piping
- Hydraulic Mining
- Dredge Lines

Want an "Edge" on competition?

Reduced chipping costs give you a basic sales advantage. For instance, Heppenstall chipper knives, over a *long* period of time and under *various* plant conditions, have shown a consistently and substantially lower unit cost than *any* other brand on the market. Matter of fact, Heppenstall *guarantees* them to do so . . . and that's why we say that one *certain* step toward a secure business future is to *insist* on the trouble- and money-saving surety of Heppenstall knives. Write for prices. Heppenstall Company, Pittsburgh, Pa.

use Heppenstall E.I.S. Chipper Knives

More Newsprint Paper Some Months Away

Toronto Reports New Permits Not Expected To Give Much Relief For Six Months — Great Lakes Expects Renewal of Contract — Marathon To Increase New Mill Capacity To 300 Tons Daily.

TORONTO, Ont., September 17, 1945—Newspaper and magazine publishers in this district, while pleased at the prospect of securing more paper in the not too distant future, feel that it will be six or eight months yet before any real benefit will be noticeable from the revocation of old permits and the issuance of new ones by Wartime Prices and Trade Board Administrator of Printing John Atkins.

Behind the change in permits is the idea of granting publishers what has been termed "a hunting license." That is, they are now allowed to use more paper, if they can find it. Under the new regulations, all newspapers and periodicals are still assured basic primary quotas of paper, the only change being in what is known as the secondary quota.

The secondary quota, prior to September 1, amounted to four tons of paper each quarter, over and above the primary quota, regardless of the size of the publication or the amount of the primary quota. The new regulation simply omits the specific tonnage and permits publishers to use any amount they can secure.

Paper producers must fill primary quotas and all the regular requirements of other customers first and it is only out of the balance that secondary quotas can be filled. Canada remains under an over-all allocation of newsprint which maintains its relationship to United States commitments. Slight improvement in the supply of paper from the mills has been expected for some time, but the fluid paper supply available for secondary quotas is still quite limited.

Expect Contract Renewal

Great Lakes Paper Co.'s 10-year newsprint contract with United States buyers is due to expire at the end of the year. However, under option agreements, the contracts can be extended another five years. "We expect continued business with our American customers, an official of the company informed the press.

Great Lakes Paper produced in 1942, 119,761 tons of newsprint and 35,000 tons of sulphite pulp. Tonnage figures for 1943 and 1944 were not reported, but operations in 1944 were limited to about 77% of paper mill capacity and 83% of surplus pulp capacity. Plans to spend over $300,000 for installation of pulp drying equipment, warehouse extensions, etc., at the Fort William, Ont., plant, as reported here some weeks ago, constitute improvements designed to reduce costs of handling and delivery of export pulp.

Marathon Adds 100 Tons to Capacity

Marathon Paper Company has decided to increase the daily capacity of its new mill at Peninsula, on the north shore of Lake Superior, from 200 tons to 300 tons, according to Vice-President Niles Anderson. The original estimate of $10 million for mill and $1.5 million for townsite therefore has been raised to $15 millions. Increased pulp demand from the parent company in the United States is one of the main reasons for the additional expenditures.

The Marathon enterprise is unusually interesting from the Canadian standpoint. In co-operation with the federal government the company has entered into a rehabilitation program to place returned servicemen in jobs and provide accommodation for servicemen's families in the new company town at Marathon. The mill along with the woods division is expected to employ 1,500 men.

The company has sufficient timber limits to furnish the wood to the mill on a continuous basis, Mr. Anderson states. These limits constitute what is known as the Pic River watershed. Virtually all the wood will be driven down the Pic and its tributaries to Lake Superior and then towed in booms of about 8,000 cords each to Peninsula Harbor, a distance of about 12 miles. Through reforestation it is hoped to maintain timber supplies indefinitely. The town will be leased by a separate corporation which will manage its affairs and administer its utilities. The town provides modern family accommodation, including apartments, single houses, houses in rows, community hall, school, hospital, hotel, etc. Many of these structures including the hotel, are already in use. The town, as well as the mill, has full fire protection.

Newsprint Statistics

Production in Canada during August 1945 amounted to 287,028 tons and shipments to 304,114 tons, the News Print Service Bureau reports. Production in the United States was 56,518 tons and shipments were 58,201 tons. The output in Newfoundland was 27,399 tons and shipments were 33,063 tons, making a total North American production of 370,945 tons and shipments of 395,378 tons. Total production in August 1944 was 348,565 tons and shipments were 348,002 tons.

The Canadian mills produced 114,641 tons more in the first eight months of 1945 than in the first eight months of 1944, which was an increase of 5.8%. The output in the United States was 8,730 tons or 1.8 more than in the first eight months of 1944; in Newfoundland production was 43,633 tons or 25.1% more, making a total increase of 167,004 tons, or 6.3% more than in the first eight months of 1944.

Stocks of news print paper at the end of August were 69,211 tons at Canadian mills, 7,826 tons at United States mills, and 44,167 tons at Newfoundland mills, making a combined total of 121,204 tons compared with 145,637 tons on July 31, 1945, and 117,698 tons at the end of August 1944.

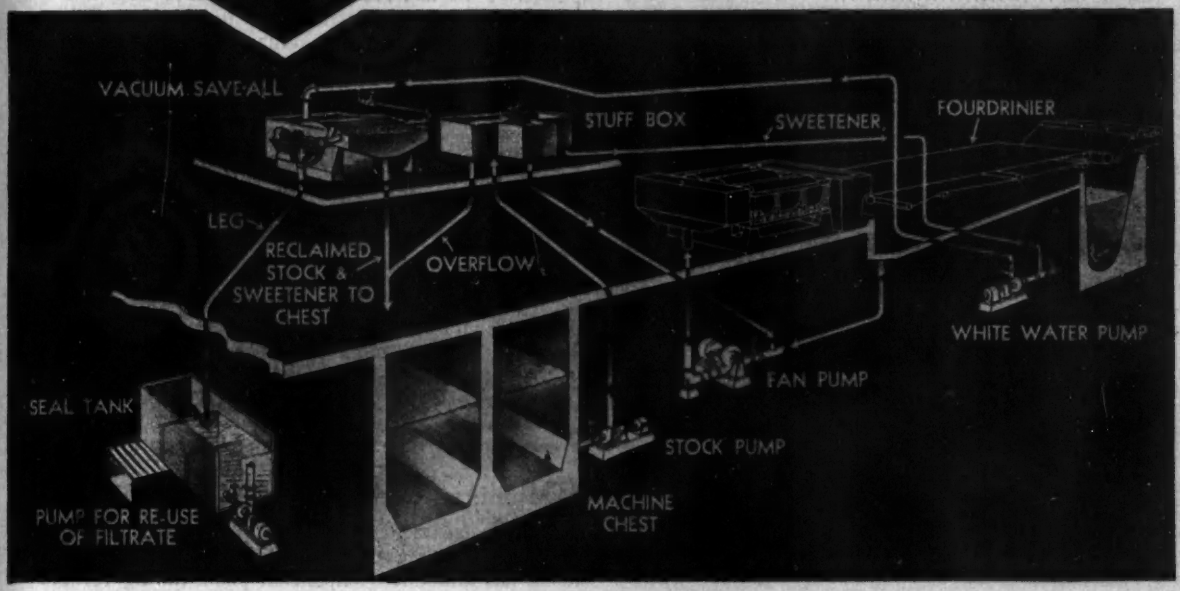
U.B.C. Establishes Paper Fellowship

VANCOUVER, B. C., September 17, 1945—Establishment of a $1000 fellowship for graduate students of the University of British Columbia as a result of a donation by the western branch of the Canadian Pulp and Paper Association has just been announced. Dr. N. A. M. MacKenzie, president of the University, stated the fellowship grant would be renewable annually to graduate students who planned a career in the pulp and paper industry.

The fellowship is open to graduates of any approved university.

IMPCO Vacuum SAVE-ALLS

—Rescue precious fibre
—End the nuisance of stream pollution



A typical Impco Vacuum Save-all System

IMPCO Vacuum Save-all systems recover as high as 95% of all white water solids, with filtrates as low as 0.2 lbs. per thousand gallons—depending on the grade of pulp.

The recovered fibre can be returned immediately as pulp furnish through the machine chest — appearing directly as additional paper tonnage—and without being graded as lower quality pulp.

In planning a Save-all system it is important to base the Save-all size upon individual tests for each paper machine.

We will gladly have an engineer call, run the tests and evaluate the savings which can be effected by our Save-alls.

IMPCO

Improved PAPER MACHINERY CORPORATION

NASHUA, NEW HAMPSHIRE

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending September 15, 1945

STOCKS

	High	Low	Last
A. P. W.	7	6⅝	6⅝
Armstrong Cork Co.	57	52¾	54⅜
Celotex Corp.	18¼	17⅞	17¾
Celotex Corp., pf.	21⅝	20½	20⅝
Certain-Teed Products Corp.	14½	13	13⅜
Certain-Teed Products Corp., pf.	180	165	180
Champion Paper & Fibre Co.	39	36⅝	38¾
Champion Paper & Fibre Co., pf.	...	...	...
Congoleum Nairn Co.	34½	32¾	33⅜
Container Corp. of America	33¾	29¾	31½
Continental-Diamond Fibre Co.	13⅝	13¼	13¼
Crown-Zellerbach Co.	26	25⅜	25⅜
Crown-Zellerbach Co., pf.	103⅛	102¾	103
Dixie Cup Co.	32½	31¼	32½
Dixie Cup Co.,—A	48½	48	48½
Flintkote Co.	32⅝	31½	31⅝
Flintkote Co., pf.	110	108½	109½
Robert Gair	7½	7⅛	7¼
Robert Gair, pf.	18¾	18¼	18½
International Paper Co.	32⅜	30	30⅝
International Paper Co., pf.	100⅛	99¼	100
Johns-Manville Corp.	133⅞	131¾	133½
Johns-Manville Corp., pf.	130½	130	130½
Kimberly-Clark Corp.	52	50½	51⅝
Mac Andrews & Forbes	34½	34⅛	34⅛
Mac Andrews & Forbes, pf.	154¾	154¾	154¾
Masonite Corp.	46¾	45⅛	45¾
Mead Corp.	18¼	17½	17⅞
Mead Corp., pf. A—6%	106	106	106
Mead Corp., pf. B—5½%	104	103	103¼
National Container Corp.	17	15⅞	16¾
Paraffine Companies, Inc.	74½	73½	73½
Paraffine Companies, Inc., pf.	109½	109½	109½
Rayonier, Inc.	21	20½	20½
Rayonier, Inc., pf.	37⅛	36¾	36¾
Ruberoid Co.	41⅝	40¾	41⅜
Scott Paper Co.	56	54	56
Scott Paper Co., pf.	111½	111½	111½
Sutherland Paper Co.	37	36	37
Union Bag & Paper Corp.	20⅞	19½	19½
United Paperboard Co.	8⅛	7⅞	8
U. S. Gypsum Co.	104	100	101½
U. S. Gypsum Co., pf.	...	...	...
West Virginia Pulp & Paper Co.	31	30	30½
West Virginia Pulp & Paper Co., pf.	110	110	110

BONDS

Abitibi Pulp & Paper Co. 5s '53	103⅜	103⅜	103⅜
Celotex Corp. 3¾s '55	...	...	...
Certain-Teed Products Corp. 5½s '48	...	...	...
Champion Paper & Fibre Co. 4¾s '50	...	...	...
International Paper Co. 6s '55	108½	108	108
International Paper Co. 5s '47	104	104	104
Mead Corp. 3½s '53	...	...	...

New York Curb Exchange

High, Low and Last for Week Ending September 15, 1945

STOCKS

	High	Low	Last
Great Northern Paper Co.	38	37	37
Hummel-Ross Fibre Corp.	10⅞	9⅞	10⅜
St. Regis Paper Co.	8	7¾	7¾
St. Regis Paper Co., pf.	...	...	...
Taggart Corp.	6½	6½	6½

BONDS

American Writing Co. 6s '61	101½	101½	101½

Box Makers to Meet October 10

William J. McClintock, Jr., of the McClintock Corporation will preside at a meeting of the Central Division, National Paper Box Manufacturers Association, October 10, at the Penn-Harris Hotel, in Harrisburg, Pa. The program will include the following speakers:

A. M. Bond, Somerville, Mass., president NPBMA; John H. Paterson, chief, paperboard division, WPB, Washington; Frank G. Canning, Chief, Paper Box Section, OPA, Washington; Walter P. Miller, Jr., of Philadelphia, former president of the association; Ralph L. Harden, Attleboro Falls, Mass., chairman, Public Relations Committee of the association; W. Clement Moore, Philadelphia, tax and cost consultant of the association; A. B. Huyssoon, of Continental Paper Company, Ridgefield Park, N. J.; O. P. Shultz, of John T. Robinson Company, Hyde Park, Mass.; B. B. Novasel, Lachman-Novasel Paper Company, New York; Carl A. Claus, New Jersey Machine Corporation, Hoboken, N. J., and Chester A. Gage, National Starch Products, Inc., New York.

CANADA TO ALLOCATE MORE NEWSPRINT

(Continued from page 10)

of newsprint to overseas totalled 56,656 tons, as compared with 48,655 tons in July. For the first eight months of this year, the totals as recorded show that 321,053 tons were shipped overseas, as compared with 293,929 tons in the similar period of 1939.

Redistribution of Forestry Concessions

Premier Duplessis has announced a new redistribution of forestry concessions concerning the Anglo-Canadian Pulp and Paper Company, of Quebec, and the Quebec North Shore Paper Company, of Comeau Bay, Que. This has been made in virtue of a law passed at the last session of the Quebec Legislature authorizing such redistributions "to assure stabilization and development of industries."

In virtue of this law Anglo Pulp has transferred to Quebec North Shore forest limits in the region of the Saguenay on the Manicougan River and its tributaries, which is necessary to Quebec North Shore to assure the permanence of its operations. For its part Anglo Pulp has received from the province the limits within reach of its mill at Quebec, "an undertaking more profitable for the population and the industry itself."

The Quebec North Shore Company, which is a subsidiary of the American-owned Ontario Paper Company, of Thorold, Ont., is a $30,000,000 enterprise, with a newsprint mill of a capacity of 840,000 lbs. of newsprint per 24 hours, the output being used for the New York Daily News. An expansion program calling for the expenditure of some two to three million dollars is planned for the immediate future.

Michigan Carton Has $2,500,000 Plan

Battle Creek, Mich., September 17, 1945—The Michigan Carton Co., through Lawrence G. Fell, president, has announced expansion plans calling for the construction of a $2,500,000 paperboard mill on its 18-acre tract at Angell street and Grand Trunk avenue. The site was purchased in 1937 by the Michigan Carton Co. from the old Advance-Rumley Corp. It included a foundry building which the Michigan Carton Co. made over into a warehouse and which will become an integral part of the new plant set-up.

The plant will include a main building about 800 feet long which will house the paperboard machine proper—a high speed machine with several newly developed features. These include a patented machine coating process on which the Michigan Carton Co. has taken out a license. In addition to the main mill, the plant will include a power plant and further warehouse construction.

Andrews Adds $500,000 Facilities

Knoxville, Tenn., September 14, 1945—A $500,000 reconversion program is being carried out by the O. B. Andrews Company, J. C. Twinam, president of the concern, announced.

The program includes erection of a new container plant near Knoxville and equipment and additions to buildings for the company's plants in Chattanooga and Atlanta, the official revealed.

The purpose of these installations, he said, is to add to the range of containers and cartons made as well as to modernize the operations already carried on. The improvements at the Chattanooga and Atlanta plants are now in process of completion.

Midwest Awaits Ending of Paper Controls

Market Expects Paper and Pulp To Continue Relatively Tight For Many Months—Backlog Orders Are Very Large—N.P.T.A. Meets September 25—Salesmen Plan For Fall Meetings—Other News.

CHICAGO, Ill., September 17, 1945—Chicago paper merchants and sales representatives are still waiting for some concrete information on production restrictions under Government regulations. There is considerable debate as to when such restrictions are to be lifted. In some circles October 1 is the "date." In others it is November and there are many who feel such controls will be lifted gradually-as imperceptibly as possible. Meanwhile, there is much confusion as the buying trade expects early deliveries and better quality. The trade which contacts the mills direct, however, expects pulp and paper to be tight for many months to come and looks for betterment in wrapping papers and converted items long before benefits are noticed by the remainder of the trade. Manpower and lack of interest in salvage programs now that the war is over are credited as two detrimental factors. Prisoners of war are being withdrawn from producing areas and the high wages in war plants are reported as making it difficult to get substitute workers.

In general, all lines are still confronted with a tremendous backlog of orders. All "military" papers show little sign of easing and books and covers generally are hard pressed to maintain any attention to civilian requests. Newsprint is extremely tight. Some improvement is noted in the board industry where the reconversion problem has not been so acute.

Milligan-Ryan Nuptials

Jacksonville, Illinois, was the scene of the wedding of Sergeant R. E. Milligan, Jr., son of R. Earle Milligan, secretary and manager of sales of the Seman-Patrick Paper Company, Detroit, and of Jane Ryan of that city. Prior to entering the army, Sergeant Milligan was a member of the sales promotion department of the Seman-Patrick Paper Company. The wedding took place in August.

Sapeyes Plan Busy Fall

Members of the western division of the Salesmens Association of the Paper Industry met in the Rose Room of the Hotel Sherman on September 10 to lay plans for an exceedingly busy fall season. The welcome mat was out for "Pat" Patterson, western vice president, who has been out of the city for two or three weeks. It is indicated that several "open house" meetings will be held before the annual Christmas party and that special efforts will be made to get outstanding speakers for these occasions.

N.P.T.A. Meets September 25

Chicago will get its first post-war meeting on September 25 when the executive committee of the National Paper Trade Association will convene at the Hotel Stevens to take care not only of routine matters but to figure out the proper procedure for the industry in post-war days. One of the major topics of discussion, it is expected locally, will be special efforts to keep paper before the public as a most vital factor in our peace time economy. The meeting will be under the direction of the NPTA staff and of R. M. Harris, president of the Association.

A meeting of the Mid-West Regional group will also be held in the Stevens Hotel on the following day, September 26. Attendance of all national officers is expected and there will be an unusually good attendance from this region where the industry is extremely anxious about the ways and means to be utilized by NPTA in solving post-war problems.

Plastic Papers Plan Sales Outlets

Sales offices of Plastic Papers Company, makers of converted paper and plastic packaging specialties, are now at 188 West Randolph street, in Chicago's loop. R. E. Costello, sales manager, has been identified with the conversion trade for the past eighteen years, both with the Oxford Filing Supply Company and wit hthe Sherman Paper Products Corporation. The company is now selecting representatives and distributors in all parts of the country for products which are being developed in line with the newest improvements in packaging specialties.

Simplex Elects Charles G. Wood

ADRIAN, Mich., September 14, 1945—Charles G. Wood, former secretary-treasurer of the Simplex Paper Corporation, has been elected president and treasurer of the company at a meeting of the board of directors. He replaces the late Frederick P. Wood who died May 22 as president. Arthur H. Wood was elected vice president and secretary. Robert H. Wood was elected a vice president.

Three new members were elected to the board of directors at a meeting of stockholders adjourned from May 25. The new directors are V. Hudson White of Grand Rapids, John E. Martin of Birmingham and Ennis P. Whitley of Cleveland. Their election gives the company the benefit of extensive financing, manufacturing and distribution experience. Charles Wood, Arthur Wood and Robert Wood were the other three directors elected.

The company now is rapidly turning to the production of peace-time products after the busy war years.

Waldron Promotes Charles A. Dickhaut

NEW BRUNSWICK, N. J., September 17, 1945—Appointment of Charles A. Dickhaut as Chief of Research and Development has been announced by B. R. Newcomb, president of the John Waldron Corporation. Mr. Dickhaut has been associated with the Waldron Corporation for nearly 20 years and is known throughout the industry as an outstanding authority on paper manufacturing and converting machinery.

At the age of 17, Mr. Dickhaut's interest in paper making prompted him to enter an apprenticeship with the Oxford Paper Company. Subsequently, for a number of years, he was associated with the Martin Cantine Company, manufacturers of high grade coated papers and with the Tissue Company at Saugerties, New York. After serving in the First World War, he returned in 1919 to become night superintendent of the Martin Company's plant and remained there until 1926, when he joined the technical staff of the John Waldron Corporation.

Congressional Committee Opens Paper Bids

(Continued from page 14)

48 ins.; the grain to run lengthwise of the sheet.
Aetna Paper Co. 12.33c

50% Lithograph-Finish Map

No. 65—334,000 lbs., Nos. 48 and 56; flat, cut any size, min. width 22 ins., max. width 48 ins.; the grain to run lengthwise of the sheet.
Stanford Paper Co. .....
(50,000 lbs. only) 15.96c
(50,000 lbs. only) 15.25c
Aetna Paper Co. 14.98c

75% Lithograph-Finish Map

No. 66—205,000 lbs., Nos. 32 and 40; flat, cut any size, min. width 24 ins., max. width 48 ins.; the grain to run lengthwise of the sheet; ream markers to be omitted.
Mudge Paper Co. .....
(No. 32—40 to 50,000 lbs. only) 20.36c
(No. 40—40 to 5),000 lbs. only) 18.86c
Barton, Duer & Koch Paper Co. ..
(50,000 lbs. only) 18.25c

50% White Chart, Lithograph-Finish

No. 68—1,930,000 lbs., No. 72; flat, cut any size, min. width 22 ins., max. width 46 ins.; the grain to run lengthwise of the sheet unless otherwise specified.
Franklin Research Co. 19.425c

Chemical Wood Manifold, White and Colored

No. 71—300,000 lbs. white, No. 18; flat, cut 21x32, 28x34, 32x42 and 34x44 ins.; the grain to run 21-inch and 42-inch ways.
No Bid.

No. 73—70,000 lbs., blue, cherry green, pink, salmon and yellow, No. 18; flat, cut 21x32, 22x34, 28x34, 38x42, and 34x44 ins.; the grain to run the 21-inch and 42-inch ways. Min. order, one color, 5,000 lbs.
No Bid.

50% Manifold, White and Colored

No. 75—35,000 lbs., white, No. 14; flat, cut 38x48 ins.; min. order 5,000 lbs.
Barton, Duer & Koch Paper Co. .. 27.00c

No. 76—150,000 lbs.; white, No. 18; flat, cut 21x32, 22x34, 28x34, 32x42, and 34x44 ins.; the grain to run the 21-inch and 42-inch ways.
Old Dominion Paper Co. .....
(60,000 lbs. only) 21.997c

No. 78—60,000 lbs., blue, cherry, green, pink, salmon and yellow, No. 18; flat, cut 21x32, 22x34, 28x34, and 34x44 ins.; the grain to run the 21-inch way on the 21x32-inch size. Min. order, one color, 5,000 lbs.
Old Dominion Paper Co. 22.747c

50% White Glazed Manifold

No. 85—100,000 lbs., No. 16; flat, cut 28x34 ins.; the grain to run the 28-inch way. Min. order 20,000 lbs.
Barton, Duer & Koch Paper Co. ..
(80,000 lbs. only) 27.00c

Chemical Wood Bond, White and Colored

No. 101—250,000 lbs., white, No. 26; flat, cut any size, min. width 21 ins.; max. width 38 ins.
No Bid.

No. 102—500,000 lbs., white, No. 32; flat, cut any size, min. width 21 ins.; max. width 38 ins.
No Bid.

No. 103—50,000 lbs., blue, No. 32; flat, cut 32x42 ins.
No Bid.

25% Bond, White and Colored

No. 105—100,000 lbs., white, No. 26; flat, cut any size, min. width 21 ins.; max. width 48 ins.
Aetna Paper Co. 17.65c

No. 106—600,000 lbs., white, No. 32; flat, cut any size, min. width 21 ins., max. width 48 ins.
R. P. Andrews Paper Co. .....
(200,000 lbs. lost, 6, 7, 8) 1.418c
Whitaker Paper Co. .....
(100,000 lbs. lots, 6, 7, 8) 1.418c
Bulkley, Dunton & Co. .....
(200,000 lbs. lots, 6, 7, 8) 1.418c
Wilcox, Walker, Furlong Paper Co.
(200,000 lbs. lots, 6, 7, 8) 1.418c
Cauthorne Paper Co. .....
(150,000 lbs. any or all lots 6, 7, 8) 1.418c
Central Ohio Paper Co. .....
(100,000 lbs. lots, 6, 7, 8) 1.418c
Aetna Paper Co. .....
(total 1,000.000 lbs. lots, 6, 7, 8) 1.439c

No. 107—600,000 lbs., white, No. 32; flat, cut any size, min. width 21 ins., max. width 48 ins.
R. P. Andrews Paper Co. .....
(200,000 lbs. lots, 6, 7, 8) 1.418c
Whitaker Paper Co. .....
(100,000 lbs. lots, 6, 7, 8) 1.418c
Bulkley, Dunton & Co. .....
(200,000 lbs. lots, 6, 7, 8) 1.418c
Wilcox, Walker, Furlong Paper Co.
(200,000 lbs. lots, 6, 7, 8) 1.418c
Cauthorne Paper Co. .. ..
(150,000 lbs. any or all lots 5, 7, 8) 1.418c
Central Ohio Paper Co. .....
(100,000 lbs. lots, 6, 7, 8) 1.418c
Barton, Duer & Koch Paper Co. ..
(180,000 lbs. only) 1.455c
Aetna Paper Co. .....
(total 1,000 000 lb. lots, 6, 7, 8) 1.439c

No. 108—600,000 lbs.; white, No. 32; flat, cut any size, min. width 21 ins.; max. width 48 ins.
R. P. Andrews Paper Co. .....
(200,000 lbs. lots, 6, 7, 8) 1.418c
Whitaker Paper Co. .....
(100,000 lbs. lots, 6, 7, 8) 1.418c
Bulkley, Dunton & Co. .....
(200,000 lbs. lots, 6, 7, 8) 1.418c
Cauthorne Paper Co. .. ..
(150,000 lbs any or all lots, 6, 7, 8) 1.418c
Central Ohio Paper Co. .. ..
(100,000 lbs. lots, 6, 7, 8) 1.418c
Aetna Paper Co. .....
(1.000,000 lbs. lots, 6, 7, 8) 1.439c

No. 110—200,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 32; flat, cut any size, min. width 21 ins., max. width 48 ins.
Walker, Goulard, Plehn Co. .....
(50,000 lbs. lots, 110,111) 15.00c
Aetna Paper Co. 15.09c

No. 111—200,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 32; flat, cut any size, min. width 21 ins., max. width 48 ins.
Walker, Goulard, Plehn Co. .....
(50,000 lbs. lots 110,111) 15.00c
Aetna Paper Co. 15.09c

100% White Bond

No. 128—50,000 lbs., Nos. 32 and 40; flat, cut any size, min. width 16 ins., max. width 38 ins. Min. order, one substance, 2,000 lbs.
No Bid.

Chemical Wood White Ledger

No. 151—300,000 lbs., No. 48, flat, cut any size, min. width 17 ins., max. width 48 ins.
Eastern Corp. 9.60c

No. 152—100,000 lbs., No. 56; flat, cut any size, min. width 17 ins., max. width 48 ins.
Eastern Corp. 9.60c

No. 153—50,000 lbs., No. 48; rolls, 34 and 48 ins. (3-inch fiber cores).
Wilcox, Walker, Furlong Co. ... 8.95c
Eastern Corp. 9.35c

25% Ledger, White and Colored

No. 154—500,000 lbs., white, No. 48; flat, cut 22x34, 24x38, 28x34, 32x42, 34x44 and 38x48 ins. Min. order, one substance, 5,000 lbs.
Aetna Paper Co. .....
(total 500,000 lbs. 14.39c

No. 155—200,000 lbs., white, No. 56; flat, cut 22x34, 24x38, 28x34, 32x42, 34x44 and 38x48 ins. Min. order, 5,000 lbs.
Aetna Paper Co. .....
(total 500,000 lbs. 14.39c

100% White Ledger

No. 177—100,000 lbs., No. 64; flat, cut 24x38, 28x34, 32x42, 34x44 and 38x48 ins. Min. order, 5,000 lbs.
R. P. Andrews Paper Co. 28.13c
Walker, Goulard, Plehn Co. 28.74c
Barton, Duer & Koch Paper Co. ..
(500,000 lbs. only) 26.50c

Chemical Wood White and Colored Index

No. 183—300,000 lbs., white, 25½x30½—180; flat, cut any size, min. width 17 ins., max. width 42 ins., with projecting colored-paper marker between each 100 sheets.
No Bid.

No. 184—250,000 lbs., white, 25½x30½—220 and 280; flat, cut 34x44 ins., with projecting colored-paper marker between each 100 sheets. Min. order, one weight, 10,000 lbs.
Whitaker Paper Co. .. ..
(150,000 lbs. only) 7.67c

No. 185—50,000 lbs., buff, 25½x30½—220 and 280; flat, cut 32x42 ins., with projecting colored-paper marker between each 100 sheets.
No Bid.

50% Index, White and Colored

No. 189—300,000 lbs., white, 25½x30½—180; flat, cut 24x38, 28x34, 34x44 and 38x48 ins., with projecting colored-paper marker between each 100 sheets. Min. order, 10,000 lbs.
Walker, Goulard, Plehn Co. ... 15.00c
Barton, Duer & Koch Paper Co. .. 15.67c

No. 190—500,000 lbs., white, 25½x30½—220 and 280; flat, cut 24x38, 28x34, 32x42, 34x44 and 38x48 ins., with projecting colored-paper marker between each 100 sheets. Min. order, one weight, 10,000 lbs.
Walker, Goulard, Plehn Co. .....
(10,000 lbs.) 16.40c
(20,000 lbs.) 16.30c
(30 000 lbs.) 16.20c
(40 to 50,000 lbs.) 16.10c
Barton, Duer & Koch Paper Co. .. 15.67c

No. 191—300,000 lbs., blue, buff, cherry, fawn, green, pink, salmon and yellow, 25½x30½—220 and 280; flat, cut 24x38, 28x34, 34x44 and 38x48 ins., with projecting colored-paper marker between each 100 sheets. Min. order, one color, one weight. 5,000 lbs.
Barton, Duer & Koch Paper Co. .. 16.67c

No. 192—150,000 lbs., blue, buff, cherry, fawn, green, pink, salmon and yellow 25½x30½—180; flat, cut 24x38, 28x34, 34x44 and 38x48 ins., with projecting colored-paper marker between each 100 sheets. Min. order, one color, 5,000 lbs.
Walker, Goulard, Plehn Co. 15.75c
Barton, Duer & Koch Paper Co. .. 16.17c

100% White Index

No. 196—50,000 lbs., 25½x30½—220; flat, cut 20½x30½ and 34x44 ins.
R. P. Andrews Paper Co. 27.16c
Walker, Goulard, Plehn Co. 27.74c
Barton, Duer & Koch Paper Co. .. 26.00c

Antique-Finish Cover, White and Colored

No. 203—200,000 lbs., antique; white, blue, buff, dawn, quaker drab, terra cotta, gray, brown, green, gobelin blue, granite, tea and yellow; flat, 19½x25¼—95, with projecting colored - paper marker between each 500 sheets. Min. order, one color, 5,000 lbs.
Whitaker Paper Co. 8.40c
R. P. Andrews Paper Co. 8.53c

50% Laid Cover, Colored

No. 205—50,000 lbs., blue, cream white, gray and green, 20x26—130; flat, cut 19½x25¼ and 28x41 ins., with projecting colored-paper marker between each 500 sheets. Min. order, one color, 2,000 lbs.

Whitaker Paper Co. 14.90c

Wood Manila

No. 208—80,000 lbs., 24x36—80 and 100; flat, cut 25x38 and 32x42 ins., with projecting colored-paper marker between each 500 sheets.

No. 210—60,000 lbs., 24x36—120; rolls, 18-ins. diameter, 4¾, 5¾, and 7½ ins. wide, wound on wooden plugs, 1½-in. hole.

Whitaker Paper Co. .....
(4¾ inch rolls) 5.905c
(4¾ and 7½ inch rolls) 5.655c

No. 2 Kraft

No. 218—200,000 lbs., 24x36—80 to 160; cut any size, folded (25 sheets per fold) in wrapped bundles.

R. P. Andrews Paper Co. .....
(200,000 lbs. only) 4.90c

White Gummed

No. 252—600,000 sheets, flat, 22x34 ins.; min. order, 25,000 sheets.

R. P. Andrews Paper Co. .....
per M sheets 14.89c
Swigart Paper Co. 14.89c
Old Dominion Paper Co. 14.727c
Paper Corp. of America 14.85c

High-Finish Chemical Wood Manila Tag

No. 271—150,000 lbs., 24x36—280; flat, cut any size, min, width 24 ins., max. width 38 ins.

Paper Corp. of America 8.65c

Jute Tag

No. 280—100,000 lbs., 22½x28½—200; flat, cut 28x38 ins. Min. order, one weight, 10,000 lbs.

Mudge Paper Co. 10.25c

Railroad Board, White and Colored

No. 301—100,000 sheets; white, flat, 22x34 ins., 4-ply, each 100 sheets fully banded. Min. order 10,000 sheets.

Barton, Duer & Koch Paper Co....
per M sheets 34.38c
Old Dominion Paper Co. 33.997c
Stanford Paper Co. 34.22c

No. 305—30,000 sheets; buff, flat, 22x28 ins., 14 ply, each 50 sheets fully banded. Min. order, 5,000 sheets.

Barton, Duer & Koch Paper Co. ..
per M sheets 68.60c
Old Dominion Paper Co. 67.878c
Stanford Paper Co. 68.25c

Chemical Wood Tan Board

No. 310—250,000 lbs., 22½x28½—200; flat, cut 19½x28½, 24x36, 25x38, 28x38 and 34x44 ins.

R. P. Andrews Paper Co. 9.25c

United States Postal Card Paper

No. 325—1,000,000 lbs., 22½x28½—188; rolls, 22 ins. wide, 30 ins. in diameter and 33 ins. wide, 36 ins. in diameter (6-inch iron cores).

R. P. Andrews Paper Co. .....
(1,500,000 lbs. lots 325, 326, 327) 6.17c
Whitaker Paper Co. .....
(1,200,000 lbs. lots 325, 326, 327) 6.22c

No. 326—1,000,000 lbs., 22½x28½—188; rolls, 22 ins. wide, 30 ins. in diameter and 33 ins. wide, 36 ins. in diameter (6-inch iron cores).

R. P. Andrews Paper Co. ..
(1,500,000 lbs. lots 325, 326, 327) 6.17c
Whitaker Paper Co. .....
(1,200,000 lbs. lots 325, 326, 327) 6.22c

No. 327—1,000,000 lbs., 22½x28½—188; rolls, 22 ins. wide, 30 ins. in diameter, 33 ins. wide and 36 ins. in diameter (6-inch iron cores).

R. P. Andrews Paper Co. .....
(1,500,000 lbs. lots 325, 326, 327) 6.17c
Whitaker Paper Co. .....
(1,200,000 lbs. lots 325, 326, 327) 6.22c

Pressboard, Colored

No. 351—50,000 sheets, red; flat, 24x32 ins., thickness .0140 ins. Min. order, 5,000 sheets.

R. P. Andrews Paper Co. .....
per C sheets 7.15c
Barton, Duer & Koch Paper Co. .. 7.75c

News Board

No. 360—200,000 lbs., 26x38—100, flat, cut any size, min. 21x32 ins., max. 40x52½ ins. (to be trimmed square on four sides).

Whitaker Paper Co. 3.03c

Binder's Board, No. 1 Quality

No. 366—160,000 lbs.; flat, to trim 25x30 ins., No. 16, 18, 20, 25, 30 and 40.

Mathers-Lamm Paper Co. 4.546c

No. 367—50,000 lbs. 25¾x30¾ ins., No. 12 and 20; flat, to trim 34x44 ins.

Binder's Board, Best Quality

No. 368—20,000 lbs.; flat, to trim 20x30 ins. and 22x28 ins., Nos. 18, 20 25, 30, 35, 40, and 45. Min. order, 5,000 lbs.

Consolidated Paper Co. 5.87c

Chestnut Cover Board

No. 369—120,000 lbs.; flat, to trim 25x30 ins., Nos. 17, 19, 21, 25, 31 and 41.

Mead Sales Co. .....
(caliper 60 pt. and up) 4.00c
(caliper 50 pt.) 4.375c

B.C.P.&P. Studies Refinements

VANCOUVER, B. C., September 19, 1945—Lawrence Killam, president of the British Columbia Pulp and Paper Company, states that his organization at the present time is studying proposals for further refinements in operation methods. He anticipates that data will be available in about six weeks' time, on which decision can be made by the company as to possible future development.

This company had been engaged in an extensive program of expansion and improvement at its plants at Woodfibre and Port Alice immediately prior to and following the outbreak of war. This program involved the expenditure of approximately $2,000,000. Due to scarcity of labor and material shortages, the British Columbia Pulp and Paper Company however was unable to take the fullest advantage of its increased capacity. With the return of men to regular employment, the company's plants are now being brought up to capacity as men are becoming available.

At the present time the company is completing the erection of 20 new houses at its plant at Port Alice, B. C. A concrete storage bin is also under construction at Port Alice at a cost of $80,000. This will replace a bin which was recently destroyed by fire at that plant.

Florida Pulp to Expand Output

PENSACOLA, Fla., September 16, 1945—Florida Pulp and Paper Company, with wartime contracts cancelled, already has begun expansion costing $350,000, with a call for hundreds more men.

Price Brothers Names Vice-Presidents

QUEBEC, P. Q., September 19, 1945—In pursuance of Price Brothers & Company, Limited operational reorganization, the following changes and appointments have been authorized.

Major Edward Flynn, having gone on pension, will assume such special duties as may be arranged with the President.

A. C. Price becomes vice-president in charge of sales of the parent company (in addition to continuing as president of Price Brothers Sales Corporation).

G. F. Layne becomes vice-president in charge of all manufacturing operations of the company and its subsidiaries—the line of authority and reporting, etc., will continue as heretofore. Mr. Layne will continue to be Chief Engineer.

P. W. Sims becomes vice-president in charge of finances and accounts, continuing as treasurer and comptroller.

M. R. Kane is confirmed as vice-president in charge of woodlands operations and all matters pertaining to company forest areas.

W. P. Good becomes vice-president of the new department of labour personnel and welfare.

Oxford Profits $444,915

The Oxford Paper Company reports for the three months ended June 30, 1945, net earnings after charges of $231,204. For six months ended the same date, net earnings were $444,915 compared with $429,311 in the corresponding six months of 1944.

PAPER
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W. L. Cook, Editor

PULP ALLOCATION REVOKED

Revocation of Wood Pulp Conservation Order M-93 will become effective September 30, 1945, the War Production Board has announced. This terminates three and one-half years of wartime allocation. Conditions are now satisfactory and the WPB estimates that domestic production plus imports indicate a total available supply of approximately 3,159,000 tons for the fourth quarter. The sources and estimates are as follows: domestic production, 2,631,000 tons; imports from Canada, 278,000 tons, and imports from Sweden, 250,000 tons. Fourth quarter estimates, based upon unrestricted consumption, are estimated at 2,995,000 tons for paper and paperboard; 128,000 tons for non-paper consumption, and 13,000 tons for export.

In making this announcement to all United States producers and consumers of wood pulp the WPB states that from the foregoing it is evident that supply and requirements are approximately in balance for the fourth quarter on an over-all basis. In addition, individual mills will have an inventory of market pulp on hand and in transit, as of September 30, 1945, equal to approximately 45 days supply on the basis of third quarter consumption, except in soda pulp, groundwood, and miscellaneous grades, and except in those cases where mills have refused allocations intended to raise their inventory to this level. The reports indicate, the WPB states, that the great majority of mills will have sufficient deliveries of market pulp against contracts during the fourth quarter to cover a rate of consumption at least equal to their revised authorized third quarter level of consumption and, in most instances, substantially more than this amount. The Forest Products Bureau takes the position that the third quarter authorized consumption constitutes a reasonable minimum level, and that any increased consumption over this amount or the starting up of new or previously shut down operations, is properly dependent upon the ability of individual companies to make their own arrangements for the necessary additional pulp deliveries.

Examination of the fourth quarter shipping schedules, the release states, submitted by producers and agents showed a small minority of mills which, for various reasons, would lack sufficient scheduled deliveries during the fourth quarter to cover a rate of consumption equal to their third quarter authorized level. In these instances, a calculation of the deficit in deliveries below this rate has been made and additional allocations have been or will be provided to the extent possible during the remaining life of the order, to make up the deficiency. In general, each mill consuming market pulp should have sufficient inventory and scheduled deliveries available during the fourth quarter to cover at least its third quarter authorized rate of market pulp consumption and leave approximately a 45 day inventory level at the end of the year, based on that rate of consumption. Each mill must make its own decision as to how much to increase its fourth quarter consumption above the third quarter rate, bearing in mind its assured sources of supply, the seasonal interruption of Scandinavian shipping, and other normal business factors.

It should be noted that despite the revocation of Order M-93, forms WPB-698, WPB-699—Part 2, and WPB-3365, due in September, must still be filed in October, to cover September operations. It is probable that the Department of Commerce will take over the responsibility for obtaining this information on a simplified report form. Forms WPB-697, WPB-699—Part 1, WPB-2973, WPB-2974, and WPB-3563 will not again be required, and the monthly letter from pulp mills advising the quantity of wood pulp exported in the previous month will not be required after those covering September shipments.

The WPB explains that, while the industry can sell, purchase, and use wood pulp at its own discretion after October 1, the impression should not be gained that pulp and paper are now in ample supply. On the contrary, the situation is in such close balance that pulp supplies should be husbanded carefully and maximum utilization of waste paper and other supplementary fibers is still of the utmost importance. The industry is reminded that under the general inventory orders of the War Production Board, no mill is permitted to carry more than a reasonable necessary working inventory, and the Forest Products Bureau anticipates that mills with ample inventories will be cooperative in releasing pulp to assist other mills.

In announcing that Order M-294 covering Manila fiber and old rope, and Order M-377 covering waste paper, have also been revoked, notice was given that the Pulp Allocation Office will be terminated on October 1. The Forest Products Bureau will continue to function. In complimenting the industry on its wartime record, Robert H. Evans, chief Pulp Allocation Office said: The pulp and paper industry can take great pride in its performance during the war. Never has it failed to meet every demand placed upon it by the Armed Forces and other government agencies. At the same time the civilian economy has been kept reasonably, if not plentifully, supplied with paper and paperboard. Under allocation, pulp has been equitably distributed throughout industry, thereby cushioning the loss of all our European imports and the heavy demands placed upon us for nitrating pulp and export pulp. Moreover, Order M-93 has been perhaps unique among major orders in never having had a single appeal carried to the Appeals Board of the War Production Board.

A.N.P.A. Reports on Newsprint

Daily newspapers reporting to the American Newspaper Publishers Association consumed 202,911 tons of newsprint paper in Aug. 1945, compared with 182,432 tons in 1944 and 224,361 tons in 1941. This was an increase in Aug. 1945 over Aug. 1944 of 11.2% and a decrease under Aug. 1941 of 9.6%. The year 1941 is the base for calculating allowable use by newspapers.

The total estimated newsprint consumption in the United States for Aug. 1945 was 289,873 tons which includes all kinds of uses of newsprint paper. For the first eight months of 1945 it was estimated to be 2,204,879 tons.

During the first eight months of 1945 the reporting newspapers used 1,543,415 tons of newsprint, an increase of 1.2% over the first eight months of 1944 and a decrease of 19.1% under the first eight months of 1941.

Stocks of newsprint paper on hand with newspapers reporting to the ANPA were 49 days' supply at the end of Aug. 1945, which was a decrease of 5 days' supply from 54 days on hand at the end of July 1945.

Dalton Mills Seek More Help

DALTON, Mass., Sept. 15, 1945—The two local paper manufacturers agree on two major conditions—a bright postwar employment outlook and a current shortage of help.

Crane and Company, Inc., and Bryon Weston Company now have approximately 1135 men and women on their pay rolls and would like to add a total of 30 hands, mostly men.

Dalton's largest employer, Crane and Company, Inc., now employes about 860 and desires 15 more, particularly male. Like the other two, it reports its servicemen employees are returning to their old jobs very slowly

Approximately 275 men and women are on the Byron Weston Company pay roll and between 10 and 15 more papermakers, all men, are wanted.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1945		Corresponding Weeks—1944	
Aug. 4	93.6	Aug. 5	89.8
Aug. 11	93.0	Aug. 12	91.2
Aug. 18	67.8	Aug. 19	90.4
Aug. 25	95.4	Aug. 26	92.2
Sept. 1	95.2	Sept. 2	89.4
Sept. 8	75.9	Sept. 9	74.4

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1944	88.7	88.5	88.1	87.6	88.7	89.8	80.3	90.6	88.2	92.5	90.6	92.4	88.1
1945	86.7	89.4	90.2	88.1	89.8	91.2	80.8	88.6					

COMPARATIVE YEARLY SUMMARIES

	1938	1939	1940	1941	1942	1943	1944	1945
Year to date	68.9	78.8	86.2	94.5	92.6	87.9	87.5	87.7
Year Average	71.5	83.4	85.6	97.4	90.4	87.8	88.1	

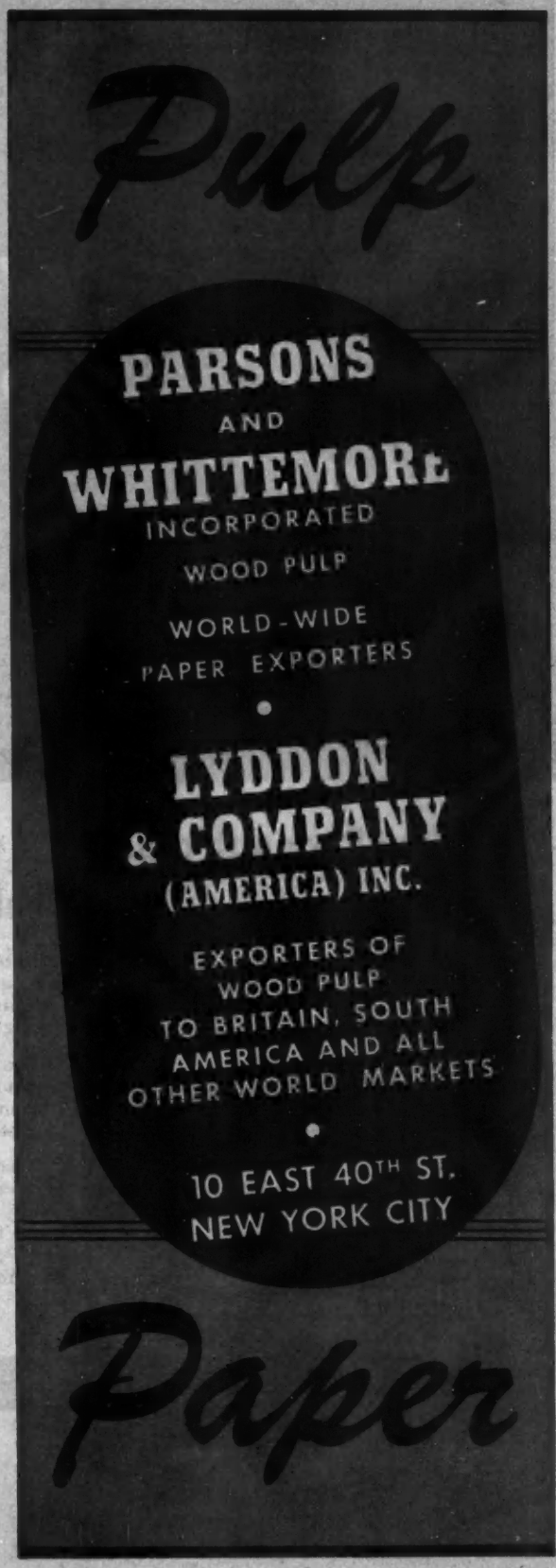
*Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS†

Current Weeks—1945		Corresponding Weeks—1944	
Aug. 4	94	Aug. 5	96
Aug. 11	94	Aug. 12	96
Aug. 18	67	Aug. 19	95
Aug. 25	99	Aug. 26	98
Sep. 1	97	Sep. 2	97
Sep. 8	80	Sep. 9	80

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1944	90	96	95	96	96	96	85	96	92	95	95	85	93
1945	91	95	97	97	96	96	86	98					

†Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.



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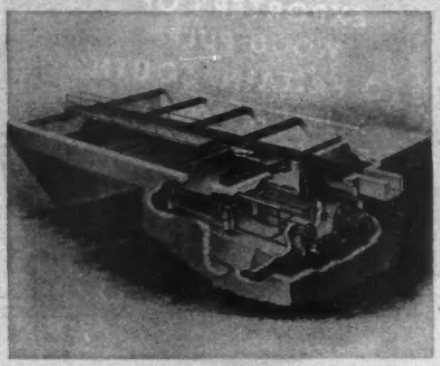

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122 E. 42nd St., New York 17, N. Y.
Edited by R. G. Macdonald, Secretary

Sizing of V Board Component Stock with Asphalt Water Emulsions*

By R. H. Cubberley[1]

Abstract

Because it has not always been possible to meet the sizing specifications required of V board component stock using the conventional sizes, the use of an asphalt emulsion is advocated when high sizing is desired.

From mill runs it has been indicated that the application of an asphalt emulsion has resulted in higher sizing, a reduction in amount of alum required, increased strength, and better formation. With the addition of the emulsion, the stock forms more quickly allowing higher machine speeds.

The demands of the armed forces for extreme durability of fibrous shipping containers, culminating in the current solid fiberboards specifications, meant that component board producers were compelled to hard size to a degree far beyond anything previously considered practical. This was particularly true of V1s and V2s. Most mills reached their limit with conventional sizes, fortifying this result with smaller percentages of the more expensive types of size.

In many instances operating and sizing compromises resulted in a generally creditable performance, but the margin of safety was small and failures, especially during the summer months, were quite common. Sizing with an asphalt water dispersion, known as Flintsize No. 33, has aroused the interest of various manufacturers because of its dependability and superior sizing value.

This material is a water dispersion compounded from an especially "dry" petroleum base asphalt with a mineral colloid emulsifier. This combination assures a nonadhesive stock that avoids felt or screen soiling. The dispersion is available in drums or tank cars, which are protected against freezing, when necessary.

It is manufactured at a fluid consistency so that it may be poured easily into beaters or diluting tanks. It has been utilized at various points in the fiber preparation system with equal facility. The breaker beater, sizing beater, and finishing off beater have all been employed successfully.

The size is precipitated or flocculated in the fiber by alum which may be incorporated in the stock at any later spot ahead of the vats. Dry feeders at the jordan intakes have been highly satisfactory. After adjustment, the pH should be maintained at 5.0 to 6.0.

It is a characteristic of the size that, contrary to the behavior of conventional sizes, water resistance of board increases progressively with increased amounts employed in the furnish. It is therefore possible to obtain a degree of water resistance in board far beyond that attainable by usual sizing methods. Certain types of wet machine board containing as high as 40% of asphalt size have been made highly waterproof by this means.

With conventional sizing carried to its ultimate in water resistance, many mills experienced serious formation difficulties, largely because of excessive foaming. In some instances, cylinder wrapping was a common occurence unless the stock was quite acid on the machine. This naturally led to erratic results and high alum consumption. At the same time loss of dry bursting strength with the high sizing necessitated utilization of richer furnishes and more virgin kraft. The supply situation was so critical that none of the mills were in position to enrich their furnishes.

With approximately 5% asphalt solids from the size, plant experience was highly encouraging in numerous mills. As soon as the asphalt sized stock hit the machines foaming subsided and formation improved substantially. This behavior was responsible for increased operating speeds up to the limit of drying capacity in most cases.

Alum consumption in some mills dropped from 120 to 150 pounds per ton on conventional hard sizing to a range of 60 to 80 pounds with the asphalt emulsion. This is a definite out-of-pocket saving realized because of the neutral nature of the asphalt size and the good results at comparatively moderate stock acidity. The emulsion flocculates on the fibers with excellent retention on the comparatively slow furnishes involved at 6.0 pH.

The size may be used on a board machine in the filler stock only, with conventional thin liners, or may be used throughout all plies, in which case the maximum benefits are attained.

Felts, cylinder molds, wet presses, and driers are not noticeably affected by paper containing 5% asphalt solids. Calendering stock containing the asphalt size in the liners is facilitated by the use of starch on the calenders.

Board Strength

One of the most valuable points about asphalt sizing with this emulsion has been the improved dry burst. In one mill the strength of a 23 point lean

* Presented by title at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 19-22, 1945.

[1] Flintkote Research Lab., East Rutherford, N. J.

furnish board had been running about 88 points, with conventional hard sizing including some wax, whereas the same furnish with asphalt averaged 101 points. Here only three of the five plies contained the asphalt. Another mill with a richer furnish was barely touching an expected average of 125 points, bursting strength, on 28-point, but secured 170 or better on shifting to the emulsion, where it was incorporated in the top and bottom liners as well as the fillers. In the latter case, possibilities of kraft fiber conservation and substantial economies are self evident. Inclusion of the asphalt sizing in the liners permits the fullest advantage to be taken of its best qualities with the usual unbalanced sheet construction.

When compared with normal hard sizing the percentage water absorption, or immersion number is not greatly improved until 8 to 10% of the emulsion is reached. On the other hand the wet bursting strength, after the absorption of an equivalent amount of water, is always favorable to the asphalt, e.g., with identical furnishes in each case averages of many tests showed:

	Conventional Sizing	Asphalt Emulsion
Wet bursting strength (28-point), 10 min., points	80	120
Wet bursting strength (23-point), 2 hr., points..	24	32
Wet bursting strength (23-point), 24 hr., points.	19.3	28

These figures still do not tell the whole story because tests several days later indicated improved wet strength and smaller immersion numbers for the asphalt sized components with no change in the others. Additionally, when combined into V board the advantages of the size were still further magnified, giving wet strengths with a wide margin of safety where formerly failures or "near misses" were the rule with richer furnishes.

It is not believed that any unusual true wet strength virtues may be claimed for the asphalt emulsion, but that it functions to produce initial fiber bond reinforcement that is efficiently waterproofed by the asphalt.

In the final analysis, the long range experience of one board mill provides the answer to the best quality V board at the lowest overall costs. With a background covering the entire 1944 calendar year, the wet bursting strengths for V2s were averaging 440 during the first part of the year with conventional sizing. Switching to asphalt sizing about midyear the wet burst on the combined board with leaner furnishes in the components jumped to an average of 540. At the same time the total cost of the finished board showed a 15% drop despite increased costs for materials, labor, and sizing.

The factors responsible for this favorable situation were: 1, Higher operating speeds with the reduced foaming and better formation, 2, reduced alum consumption, and 3, leaner furnishes.

General Improvements

The test results based on mill runs show some variations, but it can be said, generally, that as against the normal sizing of filler and liner sheets, the use of 7 to 8% of the asphalt size gives the following improvements.

1. The reduction in fiber quality of furnishes is more than overcome by the bond given to the fibers by the asphalt and the improvement in formation of the sheet.
2. Reduction (slight) in amount of furnish to produce same caliper, because of the bulking effect of asphalt in sheets.
3. Reduction in use of alum for adjustment of pH.
4. Reduction (or elimination) of foaming in vats with consequent savings in cost of antifoaming agents. antifoaming agents.
5. Reduction in conversion costs because of increased speed of formation of sheets. Increased speed varies upward to 30% depending upon calipers made.
6. Reduction (substantial) in water absorption ot finished laminated sheets.
7. Increases of dry and wet bursting strength, also variable but up to very substantial amounts depending on character of furnish used, amount of size used (but within certain limits) and whether or not the size is used in the liners as well.

There possibly are other factors of improvement not yet evaluated fully, but the above are more than sufficient to indicate possibilities for peacetime uses.

Empire State TAPPI at Watertown

The Watertown Group of the TAPPI Empire State Section met at the Woodruff Hotel, Watertown, N. Y., on Thursday evening, September 13th. Henry L. Mellen of the Hercules Powder Company, Holyoke, Mass., talked on Sizing and Size Extenders. His talk included comments on the cause and duration of the size shortage, the need for reexamination of sizing specifications, study of the concentration and uniformity of individual mills, size emulsion, methods of addition. The extenders discussed were wax, glue, casein and other protein materials.

Those present included: A. Alcombrack, W. J. Argy, Wilfred Arsenault, G. H. Baker, B. W. Barrows, E. P. Bernier, R. T. Bingham, J. G. Bullard, H. D. Cook, L. W. Couture, Don Crainer, Bud Cross, Stanley Donaldson, George Duerr, C. M. Durkee, Frank Durkee, W. P. Forbes, G. E. Fromm, L. J. Galligan, E. A. Godfrey, F. C. Goodwill, R. J. Hackett, Walter Hebert, C. L. Horton, Martin Jaffe, C. F. Juvell, D. J. Kesterke, W. H. Kraske, Joe Leek, F. E. Loessi, J. A. Lum, H. J. Lynch, Everett Mahannah, J. C. Marrone, Joseph Martin, D. C. Mather, H. L. Mellen, W. Mills, Ed. Moncalieri, Kenneth Moore, J. W. Morrow, C. R. Myers, M. D. Myers, M. M. Nolan, C. A. Nugent, J. P. Ormsby, Noel R. Phillips, R. N. Prince, Fred R. Ramage, H. M. Rice, C. J. Slack, H. A. Spencer, K. C. Strough, J. H. Treadwell, E. F. Tucker, J. M. Turner, H. R. Wheeler, H. R. Wheeler, Jr., A. J. Wirpsa, J. V. Wolff.

TAPPI Notes

Walter E. Woods, formerly of the APW Paper Company is now manager of the paper mill division of Sitroux, Inc., Utica, N. Y.

J. Frank Seely, formerly of the Union Bag and Paper Corporation is now assistant professor of chemical engineering at the North Carolina State College, Raleigh, N. C.

Norbert Bernheimer is now technical supervisor of the pulp division, Hollingsworth & Whitney Company, Waterville, Maine.

Rex H. Dixon, chief works chemist for the Australian Paper Manufacturers Ltd., Melbourne, Australia, is visiting in the United States.

Capt. Fred E. Culp, formerly of the Consolidated Water Power & Paper Company is now at the Allegheny Ballistics Laboratory, Cumberland, Md.

Lt. (j.g.) Lawrence S. Tobias is back from two years in the Pacific and is located at 312 University Avenue, Ithaca, N. Y.

Rex Vincent has succeeded P. M. Loddengaard as official representative of the Bulkley, Dunton Pulp Company in the Technical Association.

Modern European Pulp Bleaching*

By Edwin C. Jahn[1]

Abstract

A number of grades of bleached pulp are manufactured in Scandinavia and there is a great diversity in techniques and operation employed in the bleaching process in the production of similar pulps by different mills. A general outline is given of the practices employed in the bleaching of viscose, high alpha, and sulphate pulps.

The stock flow in the af Schultén and Kamyr processes is also indicated. The bleaching operation is closely integrated with the other operations of the mill, particularly cooking and wood selection.

The question, "What is new in European pulp bleaching?" is a large one and the writer does not pretend that he can answer it more than in part. The discussion will be confined primarily to Sweden and Finland, which countries the writer visited for some months during 1943 and 1944.

A number of mills in Scandinavia have specialized in bleached pulps for many years and have developed grades and brands of bleached paper pulps internationally well-known. In the years just prior to the war, interest developed in another type of bleached pulp, namely, bleached sulphite for viscose. The development of a growing staple fiber industry in Europe, particularly in Italy and Germany, led to increased production of viscose pulp in Germany and Sweden. In 1938 over 200,000 metric tons of viscose pulp were exported from Sweden. Sweden's peak export year for viscose pulp was 1942, with over 300,000 metric tons exported. With the encirclement of Sweden by the Axis countries after the invasion of Norway in April, 1940, Sweden lost well over three-fourths of her normal pulp markets. Since only viscose pulp had any appreciable market, many mills turned to this product so that the capacity for producing viscose pulp kept expanding until it reached nearly 550,000 metric tons. Production at this capacity was never realized since many of the extensions made in 1943 were completed after the outlets for viscose had considerably decreased, mainly by the loss of the Italian market.

More recently, interest in bleached sulphate pulp has increased in Sweden. The prewar capacity was not large, only about 130,000 metric tons. By July, 1944, the capacity had been increased about 2.5 times, and two other large kraft mills were preparing to install bleach plants. The sulphate bleach extensions are being made for post-war markets. Much hope is being laid on strong post-war markets for bleached sulphate as well as bleached sulphite, particularly in the United States.

There is also considerable interest in Scandinavia in high alpha pulps for cellulose ethers, acetate, and nitrates. The production of these pulps is still relatively small and is confined to the domestic market. Both sulphite and sulphate pulps are being made for nitration. Considerable research activity is underway in the high alpha and dissolving pulp fields.

In visiting different pulp mills in Scandinavia the impression is gained that there is great diversity in techniques and operation. Nearly every mill has its own innovations in plant design and technology based on the experience gained through the years and the ideas of the engineers at the plant. There are few standard bleach plant designs and these are usually modified to meet the conditions of the mill and the wishes of the operators. One of the well-known bleach systems, of course, is the Kamyr, of which several types are made. The proposed systems of the Finnish engineer, Kurt af Schultén, are described by him in an article in the *Paper and Timber Journal for Finland*, No. 7A, 1943. The Kamyr designs are described in a booklet put out by the company in 1943, commemmorating 10 years of work in the bleaching field.

Bleaching in the newer plants is most commonly carried out continuously in a multistage process employing chlorine gas, alkali, and hypochlorite in a combination of towers and circulation bleachers. An after-treatment with sulphur dioxide is common. There is a tendency toward greater use of towers and less of circulating bleachers. Some Finnish mills planning new bleach plants are basing their systems on towers only but are leaving space for Bellmers if they prove needed.

af Schultén Continuous Bleaching

The proposed constructions described by af Schultén, for example, include only towers for carrying on the various reactions, whether the bleaching is done batch-wise or continuously. The equipment for the af Schultén continuous process includes the following: three chlorination towers with seven chlorination pumps and three chlorine mixing or absorption tubes; two alkali towers, each 25 cubic meters; two bleach towers, each 180 cubic meters; four vacuum washers for washing and filtering; three pulp pumps; five pulp chests, and one chlorine vaporizer with regulating valve and meter.

The total tower capacity is 440 cubic meters and represents a layout to handle 100 metric tons bleached sulphite or 75 metric tons bleached sulphate per day. No installations as far as known have been made employing this system, but it might be of interest to outline af Schultén's proposed process.

The first chlorine tower has a volume of 17 cubic meters, the second, 25 cubic meters, and the third is a narrow reaction tube. The chlorine mixing or absorption tubes are mixing chambers for the pulp and chlorine. The tube diameter increases for a short distance (¼) up from the bottom where the pulp enters from a pump. At the widest point the chlorine gas enters. The tube then narrows gradually (upper ¾) and the mixture passes through a second pump and enters the bottom of the chlorination tower. The two alkali towers are designed leaning to minimize packing and make it easier to flush out.

The flow of the pulp through the above system is as follows:

Unbleached pulp, 2.5% consistency → Stock chest No. 1 → Pump → Chlorine absorption and mixing tube → Pump → To bottom of chlorination reaction tower No. 1 through which it passes upwards in about 6 minutes → Stainless steel vacuum washer

* Presented by title at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 19-22, 1945.

[1] Member TAPPI; Professor, New York State College of Forestry, Syracuse, N. Y.

where pulp is freed of acids and byproducts and concentrated to 22 to 23% consistency → Mixer, where caustic soda solution is added and the pulp heated up to 40 to 60°C → Drops into alkali tower No. 1 (tile-lined concrete or rubber-lined iron plate) through which it passes in about 1 hour → Stock chest No. 2 equipped with circulation and to which water is added to bring the pulp to 2% consistency → Pump → Vacuum filter where washed and thickened → Stock chest No. 3 where pulp is now at 4% consistency → Pump → Second Chlorine mixing tube → Pump → Bottom of chlorination reaction tower No. 2 through which it passes upwards in about 6 minutes → Vacuum filter → Mixer, where caustic soda solution is added and the pulp heated → Drops into alkali tower No. 2 through which it passes in about 1 hour → Drops into stock chest No. 4 where water is added to bring to 2% consistency → Pump → Vacuum filter → Mixer → Stock chest No. 5, where pulp is 7% consistency → Pump → Third chlorine mixing tube → Pump, where a lime suspension or caustic soda solution is added to the chlorine-pulp mixture → Bottom of reaction tower No. 3 which is a narrow tower, almost a pipe where a chlorine-hypochlorite bleaching sets in and at the top of the tower steam is added to heat the mixture to a suitable bleaching temperature → Pump → Bleach towers which are filled and emptied alternately and have dimensions such that the pulp stands in each of these two wide towers for 5 hours → Pump → To final washing, screening, etc.

The values for time and per cent consistency given above are those for a standard type pulp, presumably a strong sulphite, and would vary according to the type of pulp. According to af Schultén, experiments indicate that the chemicals needed per metric ton of strong sulphite pulp of Roe No. 7 are 80 kg. liquid chlorine, 7.5 kg. sodium hydroxide, 5 kg. lime, and 1100 kg. steam. The pulp had a brightness of 89.5 PFI (about 83.5 G.E.). Strength values were comparable to those for the unbleached pulp.

Kamyr Continuous System

Kamyr bleaching equipment is installed in a number of Finnish and Swedish mills and in various combinations according to the product worked with and the degree of bleaching desired. The Kamyr chlorination towers, as is well known, have a drop leg or shaft through which the pulp falls to a circulation pump where the chlorine gas is admitted. The pump presses the mixture into the bottom of the tower tangentially to the wall, giving it a circular motion as it passes up the tower. The tower is built of concrete with acidproof lining. The pump and tower can handle consistencies of 2 to 5%, normally 3%. The most common dimensions are a diameter of 2.5 to 3.5 meters and a height of 12 to 18 meters.

Among some of the combinations used by some mills or planned are the following:

1. Chlorination tower, alkali tower, two hypochlorite towers in series.
2. Chlorination tower, alkali tower, hypochlorite tower, hypochlorite bleacher tanks, buffer tower.
3. Chlorination tower, weak alkaline treatment and wash, second chlorination tower, wash, strong alkali tower, wash, hypo tower (and/or bleacher tanks), sulphur dioxide after-treatment tower.
4. Chlorination tower, alkali tower, second alkali (or equalizer) tower, hypochlorite tower, circulating bleach tanks, after-treatment tower.

A more detailed flow outline of the last combination including figures for bleaching a typical viscose sulphite follow:

Unbleached pulp → Two concrete chests (900 cubic feet each) with circulation, pulp at 3.5% consistency → Pump → Vacuum washer → Drop leg of chlorination tower → Circulating pump at bottom of tower at which point chlorine is added, pulp at 3% consistency, (temperature about 15°C.) moves upward in rotating motion and overflows in about 1 hour → Vacuum washer → Breaking and mixing screws, 10% consistency → Vertical shaft pump, 5% consistency, → Alkali and steam mixing tank → Pump → Thickening screw at bottom tile-lined steel alkali tower; screw squeezes out part of alkali which recirculates to mixing tank, pulp 15% consistency, time through tower 1.5 hours (temperature 20°C. but for special pulps can use 90 to 110°C.). Pulp overflows at top and removed by screw → Drops into second alkali (equalizing) tower with water to bring consistency to 3.5% → Pump → Vacuum washer → Breaking and mixing screws, consistency 10% → Vertical shaft pump, 7% consistency → Circulation pump at bottom of tower, at which point hypochlorite is added, moves upward (25 to 30°C.) and overflows → Pump → Vacuum washer → Breaking and mixing screws, 10% consistency → Series of circulating bleaching tanks, 125 cubic meters each. After pulp is added, the hypochlorite is admitted (temperature 35 to 40°C.) → Bleachers are above a large circulating tank to which pulp is dropped by hydraulically operated valves. Pulp at 3.5% consistency → Pump → Vacuum filter → Breaking and mixing screw, 10% consistency → Vertical shaft pump → Drop leg of post-treatment tower → Circulating pump at bottom of tower at which point sulphur dioxide is added, 5% consistency → Vacuum washer → Breaking and mixing screws, 10% consistency → Two circulating chests (900 cubic feet each), pulp at 3.5% consistency → Pump → Consistency regulator, 0.8% consistency → Pulp cleaning (screening or vortraps, etc.), regulators, etc. → Machine.

Many descriptive details as well as items, such as regulators, head-boxes, etc., are omitted from the above description. For a hard sulphite, a sulphate, or other type of pulp, the consistencies, times, etc., would, of course, vary.

Mill Bleaching Methods

As previously stated, most mills have devised their own techniques for bleaching, based on the accumulated experience of their engineers with the products they produce. Even when standard equipment is purchased it is usually arranged according to the ideas of the individual mill group. It is not possible therefore, to describe a uniform standard bleaching practice in Sweden or Finland. Each is independent in some respect.

Bleaching Sulphite for Viscose (Staple Fiber)

It is general practice to treat with chlorine and alkali in towers. The hypochlorite stages may be in towers or circulating bleach tanks or combinations of both. Different mills employ from two to seven towers. For sulphite bleaching the average operation usually consists of three to five stages. The consistencies at the different stages are normally 3% during chlorination, 15 to 20% during alkali treatment, and about 7 to 8% at the hypochlorite stage.

The chlorine is generally added to the pulp on the suction side of the pump and pumped into the bottom of the tower tangential to the wall or pumped through a pipe or mixing chamber and dropped into the top of the tower. One tower is most commonly

used although sometimes a second tower follows the first. Pulp is removed from the bottom of a tower by the aid of a cutting rotating spray. The reaction is carried out at about 15°C. or less. For viscose pulp the reaction time is about 45 to 50 minutes but varies depending upon the quality of pulp desired. For viscose pulps the average chlorine consumption is 15 to 20 kg. per metric ton of pulp produced. After chlorination the pulp is generally washed with water only, although some mills first wash with dilute alkali.

The alkali is added to the pulp either in a worm screw mixer, in an agitated mixing tank, or partly on a vacuum washer and partly in a breaking and mixing trough. In the latter case the pulp from the chlorine tower passes over a compartment vacuum washer where it is first washed with cold water, then with warm water, and finally alkali sprayed onto the pulp mat. The pulp-alkali mixture may be cold, warm, or heated by steam to 90 to 110°C. depending upon the type of pulp desired. In most cases for viscose or paper qualities, the lower temperatures are used.

The alkali-pulp may pass through a compressing screw of the Kamyr type at the bottom of the tower and overflow at the top, it may pass slowly downwards by gravity, or it may stand for a period of time before being dumped by gravity. The alkali consumption at this stage is about 10 to 15 kg. per metric ton of pulp for an ordinary viscose grade.

Usually the pulp now passes to the hypochlorite stage. However, in some mills producing viscose and special pulps, the chlorine and alkali treatments are repeated in a second set of towers. For some paper pulps the alkali treatment may be omitted and chlorinated pulp neutralized with lime in a tower.

The hypochlorite treatment is carried out either in towers, in circulating bleaching tanks or in combinations of both. The process may be in one step using one tower, or one set of bleaching tanks, or in two stages using two towers, or a combination of a tower and bleaching tanks. The operation is normally carried out at 30 to 40°C. and for viscose pulp there is consumed 7 to 10 kg. of available chlorine and 2 to 3 kg. of alkali for buffering per ton of pulp.

After-treatment for viscose and certain other grades is common. Sulphur dioxide is added to the pulp, either in a tower or a chest.

Bleaching High Alphas

For high alpha pulps the bleaching steps are more intensive or more numerous than for viscose pulp. This is done mainly by increasing the temperature and intensity of the alkaline treatment. Instead of 20°C., the temperature may be raised as high as 110°C. for certain types, but usually not over 90°C. The alkali consumption may range from 50 to 100 kg. per ton of pulp depending upon the per cent alpha desired. In some cases additional alkali stages (one or two) are introduced after a normal three-stage treatment with chlorine, alkali, and hypochlorite. A final chlorine dioxide stage may also be used.

Bleaching Sulphate Pulp

Generally speaking the same type of equipment is used for bleaching sulphate as for sulphite pulp. The rate of flow of the pulp through the system is generally slower providing longer reaction times. The various constants are also adjusted to give the quality desired. A higher consistency of pulp during chlorination is desirable, namely about 4.5%.

Various bleaching combinations are used, as well as different numbers of stages depending upon the whiteness desired. For certain paper grades the combination might be (1) chlorine tower, alkali tower, dilution tower, hypochlorite tower or bleachers, or (2) the chlorine, alkali, and wash treatments may be repeated before the hypochlorite or (3) the process may begin with hypochlorite in a tower, followed by chlorine, alkali, washing, and a final hypochlorite treatment, or (4) some other combination may be followed.

The question whether it is better to begin the bleaching operation with an oxidative stage, namely hypochlorite, or to use it only at the end and begin with a strong chlorination is one which is frequently debated. Many engineers believe that a certain degree of oxidation at the beginning is best and that it alters the residual condensed or resinified lignin making it easier to remove subsequently. Hedborg in a study of the bleaching of sulphate pulp (*Svensk Papperstidning* 46, 381-394, 1943) finds that treatment with hypochlorite before chlorination improves the removal of lignin, especially for pulps having high chlorine consumption. However, double chlorination seems to give better results when bleaching pulp of low chlorine consumption.

Chlorine Dioxide Bleaching

Much interest is manifested in Sweden, Finland, and Germany in the use of chlorine dioxide as a final stage in the bleaching operation of dissolving pulps, viscose, and high alphas in general. Some mills already are using chlorine dioxide and others are experimenting with it or are planning to use it.

The chlorine dioxide is used in an approximately concentrated aqueous solution. This is prepared at the mill by blowing the gas by air into an absorption tower. The gas is released from sodium chlorate by reducing the latter to chlorine dioxide and sodium sulphate.

Use of chlorine dioxide is claimed to have several advantages, namely, (1) it removes the final lignin and improves the color of the pulp, (2) it improves the yield since it causes less loss than further hypochlorite bleach necessary to attain the same quality thereby saving perhaps 0.5% alpha, (3) it reduces the quantity of chemicals needed in the hypochlorite bleach, (4) it makes the control of the bleaching operation much easier, and (5) it is believed that the reactivity of the fiber is improved.

Conclusions

The bleaching systems used in Scandinavia are, broadly speaking, relatively simple, involving combinations of treatment with chlorine, alkali, and hypochlorite with or without an after-treatment with sulphur dioxide or a final stage with chlorine dioxide. The bleaching plants are generally laid out so that they are very flexible permitting the bleaching of different kinds and qualities of pulp by different methods in the same plant.

The bleaching operation is closely integrated with the other operations of the mill, particularly cooking to produce the best possible results. Selection of wood in the wood room and pulp screening are also part of the picture. Some mills use fractionating screening to remove fines, ray cells, etc., greatly reducing the resin content of the final pulp.

Pre-cooking wood with dilute sulphuric acid prior to sulphate cooking has developed in Germany and is receiving interest in Scandinavia. It is suited for producing higher alphas and is correlated with the cooking and bleaching operations.

Developments In The Graphic Arts—1944*

By Robert H. Simmons[1]

Many of the developments in the graphic arts have been reported with the conditional phrase "when conditions permit" or "has been made available to the armed forces." Here and there the welcome phrase has been "from noncritical materials." Many of the developments have been in the nature of substitutes to take the place of materials which have "gone to war" or been restricted due to critical shortages. There are, however, a large list of developments which have or will find a use in the graphic arts.

Paper

The use of lighter weight papers, secondary pulp, and substitute materials in the manufacture of printing papers has brought with it many difficulties. Considerable has been recently written, describing and setting forth means for decreasing these difficulties.

Theodore Makarius *(1)* in his articles, "Getting Good Press Results With Today's Paper," and "Thin Papers and Practical Pressroom Pointers for Handling Lightweight Stocks"; *(2)* presents a number of factors which should be considered to print these papers. The adjustment of the press, the study of the paper in the pile and on the press to determine its curl and characteristics, the changing and treatment of the blankets on the offset press, and the adjustment and use of the ink, are all covered in these articles.

In this connection, an article "Light Weight Papers Call For Close Attention To Ink" *(3)* relates the do and don't for printing inks. "What A Pressman May Expect When Running Wartime Papers" *(4)* previews the troubles which develop as a result of stretching and substituting raw materials. The bindery also comes in for trouble with light weight papers *(5)*. The spoilage in folding and operational difficulties averages about 5%. Sheets should be well jogged to prevent choke-ups in the folders and wherever possible sheets should be slit on the press to save cutting time.

An Associated Press dispatch *(6)* to the Chicago Tribune tells about a weekly digest of the London Daily Mail where the pages are microfilmed to about the size of a dollar bill, flown to New York City and there enlarged and printed by offset. Thirty thousand copies of the King James version of the Bible *(7)* have been printed in Canada on an extra light paper called "Nema," which it is said is 30% thinner than the Oxford India and has a special "repelling" quality which causes the pages to repel each other so that it is only necessary to release the pressure and the next page pops up.

Fred Weymouth *(8)* found that starch-bound coated papers in some instances have an absorbent surface which rapidly absorbs the ink vehicle causing chalking of the pigment. He states that coated papers having a surface pH near neutral are best suited for offset work and that the machine coated papers are going to play an important part in post-war printing.

The American Writing Paper Corporation *(9)* has changed terminology to conform with changing conditions. They have dropped the classical term "rag content" and adopted "cotton content." A similar change was made in the specifications of the United States Government Printing Office in July, 1942 *(10)* when "rag content" was changed to read "cotton or flax fibers" as more nearly describing the class of fibers used in the papers.

Two new papermaking fibers have been reported: ulla grass from India and yucca fiber *(11)* obtained from the yucca plant which grows in the arid regions of the Southwestern United States and Mexico. One variety of yucca fiber is now being used in the manufacture of a special paper for the Navy.

The need for waterproof sealing tape has been met by a number of companies. The Mid-States Gummed Paper Company *(12)* are marketing a waterproof tape and paper which is moistened by a special solvent to make it adhere. It is called 1239-A Waterproof label paper and the solvent is 1239-A Solvent. The T. J. Smith Lithographing Company of Toronto *(13)* are producing a plastic impregnated label which will hold to metal in temperatures from —50° to 150°F.

The Marty Paper Company of New York City have an especially prepared paper for specific use in the stripping department of lithographic plants *(14)*. They claim it is vastly superior to the goldenrod coated paper commonly used. The Senefelder Company *(15)* has a cellulose cleaning paper for use on photo-composed plates as a wiping material. The paper is made in a three-ply pad, size 12 × 20, with an embossed corduroy pattern. It is chemically pure, bleached white, has good absorbing qualities and does not affect the chemical solutions.

The 25 × 40 inch, 1000-sheet plan for standardization of the basis weight measurements of paper, was again introduced this year *(16)*. It was approved at the 1944 Annual Meeting of the International Association of Printing House Craftsmen, held at Niagara Falls, Ontario.

Printing Inks

Baker Castor Oil Company *(17)*, New York City, has just announced the development of two new modified drying oils which are claimed to be suitable for use as quick-drying printing and lithographic ink vehicles. These new products are designated as "Castung No. 150" and "Castung No. 350." While both are said to have outstanding drying characteristics, the No. 150 bodies and dries somewhat faster than the No. 350. These oils have viscosities of U-V on the Gardner-Holdt scale; contain no solvents or added chemicals; are claimed to exhibit no reactivity with pigments; to be remarkably free from odor and to possess light color, low acid numbers, and no after-yellowing. Both are free from government restrictions and priorities. Because of their quick-bodying properties and freedom from after-tack, it is claimed that very good printing ink vehicles may be produced from combinations of these oils with the currently available types of resins.

A new synthetic resin binder *(18)* for the ink maker is known as "Amberol 820." It has a balanced

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* Presented by title at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 19-22, 1945.

[1] Member TAPPI; Chairman, TAPPI Graphic Arts Committee; Associate Chemist, Government Printing Office, Washington, D. C.

water tolerance and stability on the press rollers which favors its use in steam set inks for paper bottles, folding box cartons, and food wrappers. It has many characteristics of solubility and insolubility in organic solvents which should make it of interest.

Arthur Trist in British patent 551,467 *(19)* describes an emulsion-type vehicle for printing inks and coatings. It is produced by the colloidal milling of a solution of dispersing agent, and an acidic polymer in petroleum oil with a solution of a metallic salt in water. This produces an emulsion which is said to be highly stable and resists breakdown when ground with pigments on a roller mill. By altering the properties of the ingredients, vehicles of varying drying and penetrating qualities can be produced.

An ink called "Glink" *(20)* which sticks to glass and is permanent has been developed. It will adhere to marble, china, porcelain, and ceramics. It is noncorrosive and noninflammable. After drying the ink is not affected by the common solvents or corrosive agents.

Printing Processes

William C. Heubner *(21)* has recently given talks on his revolutionary method of printing by the Electronographic process. The method does not use pressure but the ink is induced to jump from the plate to the paper across a gap by "electromagnetic" or "electrostatic" lines of force underneath the paper. Mr. Heubner is at present working on a four-color press which embodies this principle.

The Craftint Multicolor process *(22)* was announced at the A.N.P.A. convention in Cleveland, Ohio. This process is being used in the production of color comics and magazine sections. The process involves three sheets of specially treated acetate film. Each of these sheets is prepared with a 60-line screen pattern at different angles so as to prevent moire in the final printing. Each of these sheets is capable of being developed (1) with a diagonal line pattern and (2) with a cross hatch pattern. By following a special color chart the Craftint Company has prepared, the Benday artist can prepare his copy so that he can get sixty-four colors in the final printing. This is accomplished by superimposing through the patented developing features of the Craftint sheets, a dot on dot, dot on line, and a dot on solid.

"Metagraphy" *(23)* is a method of printing by the offset processes developed by the Ross-Nahm Company of New York City, whereby they commercially produce work equal to the craftsmanship of the old master printmakers. The method employs the technique of direct lithography. It does not use the camera or process plates. "Metagraphy" is a trade name.

Albert Carmen *(24)* developed the "Carmen process" of color lithography. He uses a multilith press and zinc plates with the direct process of offset printing, doing his work directly on the zinc plate. It is a rapid method of reproducing commercially original color drawings.

British patent 547,568 describes photocollographic printing plates *(25)*. These plates are an adaptation of the "Aquatone process" whereby the gelatine coating is placed on a metal plate and treated to produce the "collotype" reticulated grain.

Photoengraving and Photography

Kromolite *(26)* is the trade name for a new method of automatically dropping out highlights. This process makes use of three solutions and a number of special filters. The solutions and filters are used together and according to a strictly automatic motion, thus effectively dropping out halftone highlight areas as easily as making a regular combination exposure.

Harry L. Miller *(27)* developed a method for blocking out or opaquing negatives using gamboge on the areas to be retained and then adding a tint print solution in which an orange dye is dissolved. The color absorbs the actinic light rays, giving a complete stopping out of the negative. The gamboge is then removed and the negative is left in a condition free from lumps and waves which occur when opaque is used. This aids in producing a film which will give good contact in printing.

A rapid fixing bath *(28)* solution has been developed which it is claimed will speed the fixing of film as well as develop more film per unit of solution than the old hypo bath. This type of fixing solution is sold under several names such as "Film-Fix" and "Foto-Fix."

The use of fluorescent materials *(29)* to accentuate the yellow and magenta for process negatives is reported. The subject after treatment is given a controlled exposure of both visible and ultra-violet light and the filters and plate emulsions are chosen to increase the density in the negative. Fluorescence enhances the brightness of the colors which become degraded by the reproduction process *(30)*. This eliminates most of the retouching. The method is applicable to line drawings made with fluorescent inks. Direct positives are obtained by photographing the fluorescence alone.

A direct color printing, photographic paper *(31)* is in use for producing maps. This paper has a tripack structure and makes possible natural color printing with little more effort than in printing black and white.

The Iriscope *(32)* translates black and white films taken with an uncorrected lens, back to the original colors. The factor which makes this possible is that each ray of color forms a pattern at precisely the same depth in the film every time. When a positive is made, using the filter, the picture appears in the original colors.

The Thomascolor Optical Unit *(33)* replaces the lens of the ordinary camera for color separation. It appears to have a use in the graphic arts, especially in process work.

A machine which will photographically set type on a lithograph plate without the need to mechanically reproduce the text in type before exposure has been developed by William C. Heubner *(34)*. Alexander G. Highton has obtained a patent on a machine to do similar work *(35)*.

Offset Printing

R. Ernest Beadie *(36)* reviewed wartime developments of offset. He states that a 300-line screen has been made available for the armed forces. The use of the magenta dyed film gives halftone negatives in the camera. A fine grained plate is produced by graining with No. 150 Carborundum for 20 minutes to remove the old work and then grained for 20 minutes with No. 220 Carborundum. The Beattie process camera uses a contact screen and a vacuum frame. The use of fluorescent lamps for the camera board gives good results and reduces the heat. Further variations in lighting are the DH-1 mercury

lamp and water-cooled lamps. New lenses are made from glass and plastic. An image reverser replaces the prism. He mentions the Iriscope, the Marty masking paper, and alloy metal plated on stainless steel. Also a new offset proof press which duplicates the fountain and inking mechanisms of a regular offset press. There is also the Long Pre-set Line-up Machine.

A packaged fountain etch called "Hydro-Etch" *(37)* has been put on the market by Harris-Seybold-Potter atter considerable field testing. The chemicals are packed in wax-sealed paperboard containers.

Photocast *(38)* is a process for making halftone newspaper plates without acid etching or the use of zinc or other metals. The subject is photographed through a line screen onto a special gelatine emulsion paper. After being developed, fixed, and treated chemically, the image is transferred to a copper surface where after the gelatine has been hardened, it is brought into contact with a preheated plastic material. Upon setting, the plastic is peeled from the plate and is used in stereotyping.

Plastics are finding a wide use in the graphic arts. Possible uses are mounting blocks for metal plates, slugs for composing machines, large display type for newspapers, rollers, and gears.

Resin impregnated wood *(39)* has proven a good mounting medium to take the place of blocking wood. It is not affected by changes in humidity.

Some plastics have already found use in molded typographic printing plates, impregnating paper for offset printing plates, matrixes for electrotype molds, and matrixes for casting plastic plates.

Aluminum when alloyed with 10% tin has a fusion point of 840 to 850°F. At this temperature this alloy can be used for stereotype metal, giving a light weight printing plate *(40)*.

Stainless steel has been recommended as a printing plate for offset printing. It has been used already in some of the special processes *(41)*. Plates made by electrolytically depositing a thin zinc coating on iron after it has been treated with a 40% potassium carbonate solution, have also found use *(42)*.

William E. Lewis obtained a patent for a lithographic adaptor for a letterpress *(43)*. This may prove useful since the general consensus of opinion in the trade is that many printers are going to convert at least partially from letterpress to offset and gravure. Some printers wonder why it is necessary to have presses which will do only one type of printing. They feel that there should be adjustments whereby each press could be changed using the proper attachments to print by all three methods.

E. I. duPont de Nemours & Company introduced two new weatherproof adhesives *(44)* for use on shipping containers; duPont adhesives 77 and 78. The new adhesives are resins in the form of stable dry white powders which can be prepared with standard mixing equipment and have all the qualities of duPont water-soluble, vinyl resin glue introduced formerly.

So-Lo Padding Glue *(45)* is a cold, flexible padding glue which works like latex rubber padding glue but contains no rubber. It is applied with a water-moistened brush, is flexible when dry, and will not crack or chip. A nonpriority synthetic rubber cement *(46)* which has most of the essentials required for a good cement is being sold by Craftint Manufacturing Company. It is transparent, does not smear ink, and will not curl the paper.

"Lucite," methyl methacrylate resin *(47)* is said to be a substitute for rubber as a material for making ink distributing rollers used on offset presses. The new rollers are durable and are helping to solve the replacement of rubber rollers. The fact that the rollers are clear and transparent assures the cleanup being well done.

The Ideal Roller and Manufacturing Company *(48)* developed a synthetic covering for rollers which is taking the place of rubber.

Plans were developed *(49)* for a National Graphic Arts Institute at a meeting of the representatives of forty-five associations in Chicago, August 9-10, 1944. This Institute will coordinate the activities of the associations through a headquarters in Washington, D. C.

A means *(50)* of preventing offset by passing the freshly printed web over rollers which hold it in a convex position and under tension has been patented. The web is dusted with a special powder and then passed between buffer rollers which buff and dust it. It can then be rewound.

A new hygrometer *(51)* which indicates moisture content by measuring the electrical resistance of polyvinyl acetate mixed with a small amount of lithium chloride is in use by the U. S. Navy.

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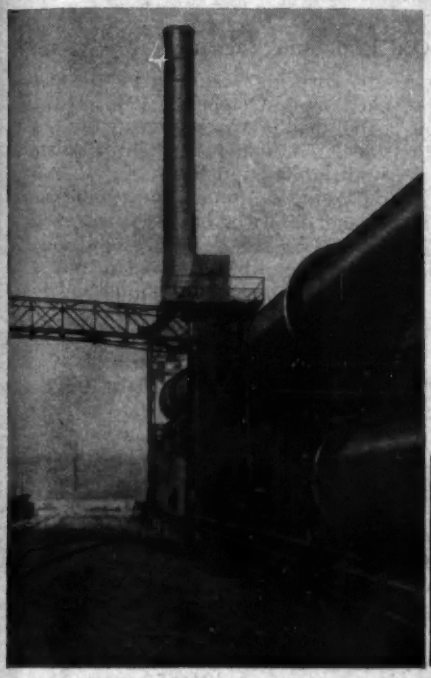
PAPER MILL OPERATORS



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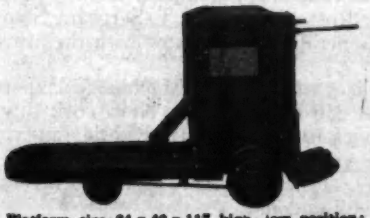
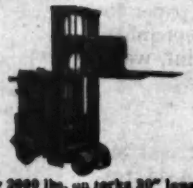
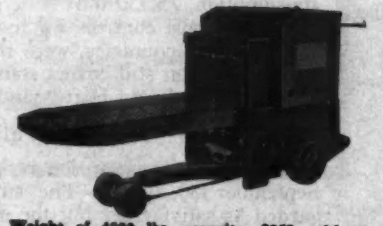


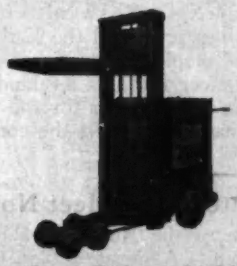
Platform size 24 x 42 x 11" high, low position; 15" high when elevated. Capacity: 2000, 3000, and 4000 pounds.



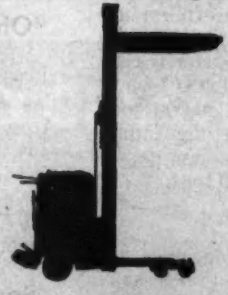
Capacity 3000 lbs. on forks 30" long. Truck turns from a 5' aisle into an intersecting aisle of 5'.



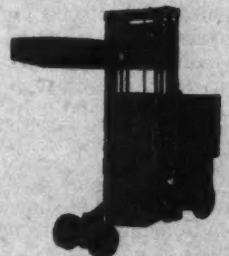
Weight of 4000 lbs. capacity—3250, without battery. Truck turns from a 5' 4" aisle into an intersecting aisle of 4'.



Platform 24" wide, 53" long and 11" high, low position. Capacity 2000, 3000 and 4000 pounds.



The Wright-Hibbard Telescoping high lift truck is designed to operate in the most congested areas of factories and warehouses. The exceptionally narrow width and short overall length found in other Wright-Hibbard trucks are retained in this model.



Platform 24" wide, 44" long and 9" high, low position. Weight of 4000 lb. capacity—3000 without battery.

New York Paper and Pulp Market Review

WPB Allocation of Wood Pulp Ends September 30 — Limitation Order L-120 and 9 Schedules Still Remain In Effect—Order M-294 On Manila Rope Revoked October 1 — Paper Stock Is Active.

Office of the PAPER TRADE JOURNAL,
Wednesday, September 19, 1945.

Pent up demand for paper and paper products is of such large tonnage to build up wholesale inventories that the supply situation continues tight. With the revocation of WPB Order M-93, ending allocation of wood pulp on September 30, 1945, the paper industry will return to more normal operations. It is to be hoped that L-120 with its nine schedules will be soon terminated, as peacetime transition cannot be as speedily completed without the elimination of all these major governmental regulations. The OPA price schedules should also be revised to include a more equitable reorganization of current costs of production.

The index of general business activity for the week ended September 8 declined to 123.4, from 127.8 for the preceding week, compared with 141.0 for the corresponding week in 1944. The index of paperboard production was 139.2, compared with 152.0 for the preceding week, and with 143.9 for the corresponding week in 1944.

Paper production for the week ended September 8 was estimated at 75.9%, compared with 74.4% for 1944, with 74.6% for 1943, with 85.2% for 1942, and with 103.8% for the corresponding week in 1941.

Paperboard production for the week ended September 8 was 93.0%, compared with 80.0% for 1944, with 83.0% for 1943, with 81.0% for 1942, and with 99.0% for the corresponding week in 1941.

Newsprint consumption restrictions to be eased on Order L-240 on October 1, and revocation of the order on December 31, 1945, has been recommended by the Newspaper Industry Advisory Committee. Overall consumption needs for the fourth quarter are 923,053 tons, of which U. S. newspaper quotas total 786,723 tons, and other domestic commercial newsprint consumption, 75,330 tons.

Paper export controls for most grades of paper to all but enemy countries, were removed on September 10. Regulation still covers standard newsprint, wall, fiber, and insulating boards and waste paper.

Wood Pulp

Wood pulp conservation order M-93 will end on September 30, 1945. The supply situation is regarded as satisfactory but the margin of supply over demand is small and the WPB urges the fullest use of waste paper and supplementary fibers for the present. Total pulp supply for the fourth quarter is estimated at 3,159,000 tons, of which 2,631,000 tons is domestic, 278,000 tons Canadian, and 250,000 tons Swedish pulp. Paper requirements for the fourth quarter are estimated at 2,995,000 tons, non-paper, 128,000 tons, and pulp for export, 13,000 tons.

Rags

Mill buying of new cotton cuttings continues active. Demand is sufficiently heavy in relation to supply to maintain a strong market with prices at ceiling levels.

Demand for roofing stock continues active. All grades of old cotton rags are in good to active demand. Prices are at ceiling levels.

Old Rope and Bagging

WPB order M-294 covering Manila fiber and old rope has been revoked, as of October 1, 1945.

No important change has been reported in the old rope market this week. Demand for Manila fiber continues to absorb all limited supplies.

Trading in scrap bagging continues slow. No material change in demand or prices has been reported this week. Some current reports indicate slightly increasing supplies in both scrap bagging and in No. 1 gunny. Good inventories of bagging are quite widely reported by large consumers.

Old Waste Paper

Mill buying of paper stock continues active. The paper industry is largely aware of the delicate balance between supply and consumption needs in wood pulp for the fourth quarter. Consequently, waste paper and other fibers continue very important supplementary materials at this state of peacetime operations.

Ross Machine Buys New Warehouse

NEWARK, N. J., September 19, 1945—The Ross Paper Machinery Company announce it has purchased a large warehouse with offices at 265-273 Passaic Street, through to 272-280 Ogden Street. The warehouse occupies an area of 30,000 square feet with offices and engineering department on the first floor.

After extensive alterations, a modern machine shop will be installed for the re-manufacture and re-building of paper, pulp and converting equipment. Twenty minutes from New York City, this plant is serviced by the following railroads: Pennsylvania, Lackawanna, Lehigh Valley and Erie.

The Ross Paper Machinery Company is owned and operated by Jack Ross and his son T/Sergeant Stanley S. Ross, as General Manager, now with the army in the Pacific.

The export offices of the Ross Machinery Export Co., are located at 250 Park Avenue, New York City, with representatives in Mexico City, Rio de Janeiro, Sao Paulo, Montevideo, Buenos Aires, Santiago, Valparaiso, Bombay, Calcutta, Antwerp, Stockholm, Paris, Dublin and London.

Ohio Boxboard Features E Ceremony

RITTMAN, Ohio, Sept. 7, 1945—The Ohio Boxboard Company featured its Labor Day celebration this year, with the Army-Navy E Award ceremony. Army-Navy representatives presented the E flag and pins to the company and employees. Lt. Col. Tracy C. Dickson, executive officer of the Cleveland Ordnance District, made the presentation for the Army, and C. E. Carpenter, vice-president of the company, accepted.

Southern Superintendents Meet Nov. 1

The southern division of the American Pulp and Paper Mill Superintendent's Association plan to hold their fall meeting at Bogalusa, La., November 1 and 2.

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EXCELSIOR KNOX Woolen Co. Camden, Me. FELTS & JACKETS

"EXCELSIOR" FELTS

Manufacturers of Felts of Superior Quality for Every Grade of Pulp and Paper

KNOX WOOLEN COMPANY
CAMDEN, MAINE

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, September 19, 1945.

BLANC FIXE—Prices on blanc fixe continue unchanged at prevailing levels. Demand is reported fair. The pulp is quoted at $40 per ton, in barrels, at works. The powder is quoted at $60 per ton, f.o.b. works.

BLEACHING POWDER—All-over demand continues heavy. Production reported high. Quotations are unchanged. Bleaching powder is currently quoted at from $2.50 to $3.10 per 100 pounds. All prices in drums, car lots, f.o.b. works.

CASEIN—OPA maximum prices on processed acid-precipitated casein are as follows: 10,000 pounds or more 24 cents per pound; 2,000 pounds, 24½ cents per pound, less than 2,000 pounds, 24¾ cents per pound f.o.b. shipping point. Imported 21 to 23 cents.

CAUSTIC SODA—Demand heavy. Production large. Market tight. Shipments of solid and flake delayed by lack of manpower. Solid caustic soda is currently quoted at $2.30 per 100 pounds. The flake and ground are currently quoted at $2.70 per 100 pounds. All prices in drums, car lots, f.o.b. works.

CHINA CLAY—Current demand is reported moderate on many grades of china clay. Quotations unchanged. Domestic filler clay is quoted at from $7.50 to $15 per ton; coating clay is quoted at from $12 to $22 per ton, at mines. Imported china clay is currently quoted at from $13 to $25 per long ton, shipside.

CHLORINE—All essential requirements met. Output continues high. Chlorine is currently quoted at $1.75 per 100 pounds, in single unit tank cars, f.o.b. works.

ROSIN—No offerings and sales. The OPA price on "G" gum rosin is $6.74 per 100 pounds in barrels, at Savannah. "FF" rosin is established quoted at $6.70 per 100 pounds, in barrels at New York. Average price on seventy per cent gum rosin size is $6.95 per 100 pounds, f.o.b. works.

SALT CAKE—Prices on salt cake continue to be reported unchanged. Domestic salt cake is currently quoted at $15 per ton, in bulk. Chrome cake is currently quoted at $16 per ton. All quoted prices in car lots, f.o.b. shipping point.

SODA ASH—Heavy demand for soda ash is reported to absorb current production. Market rather tight. Prices continue to conform to prevailing levels. Quotations on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Corn supply larger with future prospects favorable. Offerings good at this date. Demand heavy. Prices unchanged on starch. Pearl is quoted at $3.72 per 100 pounds. Powdered starch is quoted at $3.83 per 100 pounds. All prices in bags, car lots, f.o.b. Chicago.

SULPHATE OF ALUMINA—Demand good. Supply situation is favorable. Prices of the commercial grades are currently quoted at from $1.15 to $1.25 per 100 pounds. The iron free is currently quoted at $1.75 per 100 pounds. All prices in bags, car lots, f.o.b. works.

SULPHUR—Current consumption of sulphur continues heavy. Market situation unchanged. The quotation on Annual contracts continues at $16 per long ton, f.o.b. mines. The current price on contracts at Gulf Ports is $17.50 per long ton.

TALC—Demand reported good. Domestic grades are currently quoted at from $16 to $21 per ton at mines. Canadian at $24 per ton. All prices in car lots.

MARKET QUOTATIONS

All market quotations, excepting those otherwise designated as official OPA maximum prices, are based on the manufacturers' price level as of October 1-15, 1941; maximum wholesale prices are based on the merchants' maximum prices for stipulated quantities at a quoted price to all customers of a like class, as shown by the merchant's sales records of goods delivered during March, 1942. A merchant's price list in effect in March 1942, showing quotations of actual shipments, will establish the current maximum prices.

Paper

(Delivered New York)

Standard News, per ton—			
Roll, contract	*$61.00	@	—
Sheets	69.00	@	—
*OPA Maximum Price.			
Kraft—per cwt.—Carload Quantities Zone A, Delivered			
Superstandard Wrapping	*$5.25	@	—
No. 1 Wrapping	*5.00	"	—
Standard Wrapping	*4.75	"	—
Standard Bag	*4.375	"	—
*OPA Manufacturers' Prices.			
Tissues—Per Ream—Carlots			
White No. 1	1.12½	"	—
White No. 1 M. G.	1.10	"	—
White No. 1½	1.00	"	—
White No. 2	.90	"	—
Anti-Tarnish M.F.	1.20	"	—
Colored	—	"	—
Kraft	.95	"	—
Manila	.90	"	—
Toilet—1 M. Sheets—Per Case			
Unbleached	4.25	"	—
Bleached	5.70	"	—
Unbl. Toilet, 1 M.	4.16	"	—
Bleached Toilet	5.70	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.20	"	—
Bleached, Jr.	3.20	"	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	11.25	@	—
No. 1 Manila Wrapping, 35 lb.	6.00	"	6.25
No. 2 Manila Wrapping, 35 lb.	5.75	"	6.00
Boards, per ton—			
News	*50.00	@	—
Chip	*50.00	"	—
Sgl. Mla. Ll. Chip	*62.00	"	—
White Pat. Coated	*75.00	"	—
Kraft Liners 50 lb.	*63.00	"	—
Binders Boards	84.00	"	116.00

*OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5.; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items.

	Delivered in Zone 1: Bonds		Ledgers	
100% Rag Est. No. 1	$39.10	@$46.00	$40.25	@$47.25
100% Rag	32.20	" 37.75	33.35	" 39.25
85% Rag	....	"	29.90	" 35.00
75% Rag	23.00	" 27.00	24.15	" 28.25
65% Rag	....	"	22.80	" 27.75
50% Rag	18.70	" 22.75	19.90	" 24.25
25% Rag	16.40	" 20.00	17.55	" 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds		Ledgers	
No. 1	$10.55	@$12.75	$11.70	@$14.25
No. 2	9.65	" 11.75	10.80	" 13.25
No. 3	9.20	" 11.25	10.35	" 12.50
No. 4	8.90	" 10.75	10.05	" 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper. Delivered in Zone 1:

No. 1 Glossy Coated	$13.65	@	$13.9
No. 2 Glossy Coated	12.40	"	14.0
No. 3 Glossy Coated	11.60	"	12.3
No. 4 Glossy Coated	11.15	"	12.7
No. 1 Antique (watermarked)	10.25	"	11.7
No. 2 Offset	9.60	"	11.0
A Grade E. F.	9.35	"	10.7
A Grade S. & S. C.	9.60	"	11.0
B Grade E. F.	8.85	"	10.3
B Grade S. C.	9.10	"	10.5
C Grade E. F.	8.55	"	9.7
C Grade S. C.	8.80	"	10.0
D Grade E. F.	8.25	"	9.3
D Grade S. & S. C.	8.50	"	9.7

Ivory & India at $.50 cwt. extra.

Wood Pulp

OPA Maximum Prices and Canadian Manufacturers Prices, Less Freight Not Exceeding OPA Allowances.

Bl. Softwood Sulphite	$86.00
Unbl. Softwood Sulphite	74.00
Bl. Hardwood Sulphite	83.50
Unbl. Hardwood Sulphite	71.50
Bl. Mitscherlich	81.00
Unbl. Mitscherlich	72.00 @ 82.00
N. Bleached Sulphate	86.00
S. Bleached Sulphate	79.00
N. Semi-Bleached Sulphate	82.00
S. Semi Bleached Sulphate	75.00
N. Unbl. Sulphite	73.00
S. Unbl. Sulphate	63.50
Bl. Soda	76.00
Unbl. Soda	72.00
Groundwood	50.00

Transportation Allowances

Applying to Producers of Wet Wood Pulp.

	Below 50% Air Dry Weight
Northeast	$13.50
Lake Central	13.50
Southern	16.00
West Coast (in area)	10.50
West Coast (out area)	16.50

	50%-80% Air Dry Weight
Northeast	11.50
Lake Central	11.50
Southern	14.00
West Coast (in area)	9.50
West Coast (out area)	15.50

Applying to Producers of Dry Wood Pulp.

	Above 80% Air Dry Weight
Northeast	$8.50
Lake Central	8.50
Southern	11.00
West Coast (in area)	7.50
West Coast (out area)	13.50

Should freight charges actually exceed these allowances, the difference may be added to the maximum prices

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	6.50	@	7.25*
Silesias No. 1	—	"	5.75*
New Unbleached	6.75	"	7.50*
Blue Overall	—	"	5.50*
Fancy	—	"	3.50*
Washables	—	"	5.00*
Bleached Khaki Cuttings	—	"	4.25*
Unbleached Khaki Cuttings	—	"	3.50*

*OPA Maximum Prices

West Virginia Pulp and Paper Company

230 Park Ave.
New York

35 East Wacker Drive
Chicago

Public Ledger Building
Philadelphia, Pa.

503 Market St.
San Francisco, Cal.

Manufacturers of

ENGLISH FINISH BOOK
SUPERCALENDERED BOOK
and LITHOGRAPHIC PAPERS

Offset, Envelope, Bond, Writing, Mimeograph, Ledger, Eggshell, Cover and Music Papers, Index Bristol, Post Card and Label Papers, Machine Coated

HIGH GRADE COATED BOOK

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KRAFT WRAPPING AND KRAFT ENVELOPE
KRAFT LINER BOARD
BLEACHED SULPHITE AND SODA PULP
BLEACHED AND UNBLEACHED KRAFT PULP

MILLS:

Mechanicville, New York
Luke, Maryland
Covington, Virginia
Tyrone, Pennsylvania
Williamsburg, Pennsylvania
Charleston, South Carolina

Price & Pierce Ltd.

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for domestic and export

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The Harrington & King Perforating Co.

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With a MODEL "J" HAND TACHOMETER

Triple Ranges:
300— 1200 R.P.M.
1000— 4000 R.P.M.
3000—12000 R.P.M.

RUGGED-RELIABLE-CONTINUOUSLY INDICATING TYPE

WRITE FOR BULLETIN #706

HERMAN H. STICHT CO. INC.
27 PARK PLACE NEW YORK N. Y.

Old Rags

White, No. 1—			
Repacked	*3.80	"	—
Miscellaneous	*3.20	"	—
White, No. 2—			
Repacked	*2.90	"	—
Miscellaneous	*2.65	"	—
Thirds and Blues—			
Repacked	*2.20	"	—
Miscellaneous	*1.30	"	—
Roofing Rags—			
No. 1	*1.55	"	—
No. 2	*1.45	"	—
No. 3 (bagging)	*1.35	"	—
No. 4	*1.35	"	—
No. 5A	*1.35	"	—
Old Manila Rope	5.75	"	—

*OPA Maximum Prices.

Foreign Rags

Pre-War Quotations
All Prices Nominal

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—
No. 4 White Linens	2.25	"	3.25
No. 1 White Cotton	4.25	"	4.75
No. 2 White Cotton	3.25	"	3.75
No. 3 White Cotton	2.50	"	3.00
No. 4 White Cotton	1.90	"	2.20
Extra Light Prints	2.00	"	2.40
Ord. Light Prints	1.75	"	2.15
Med. Light Prints	1.55	"	1.95
Dutch Blue Cottons	2.25	"	2.50
French Blue Linens	3.00	"	—
Checks and Blues	2.00	"	—
Linsey Garments	1.90	"	2.00
Dark Cottons	1.50	"	1.60
Old Shopperies	1.30	"	1.45
New Shopperies	1.45	"	1.50
French Blues	2.25	"	2.50

BAGGING

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.25	@	3.30
Wool Tares, light	3.25	"	3.50
Wool Tares, heavy	3.50	"	3.75
Bright Bagging	3.25	"	3.50
Manila Rope—			
Foreign	—	"	—
Domestic	*5.75	"	—
Jute Threads	5.50	"	—
No. 1 Sisal Strings	*4.00	"	—
Mixed Strings	2.00	"	—

*OPA Maximum Prices.

Old Waste Papers

(F. o. b. New York)
OPA Maximum Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Envelope Cuts	3.12½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, one cut	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
Mixed Groundwood Colored Shavings	.90	"	—
Overissue Magazines	1.67½	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
Mixed Books	1.10	"	—
No. 1 White Ledger	2.30	"	—
No. 2 Mixed Ledger, colored	2.00	"	—
New Manila Envelope Cuttings, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
Extra Manilas	1.95	"	—
Mixed Kraft, Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	"	—
New 100% Kraft Corrugated Cuttings	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	.90	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Box Board Cuttings	.72½	"	—
White Blank News	1.65	"	—
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
No. 1 Mixed Paper	.95	"	—
Old Corrugated Containers	.82½	"	—
Mill Wrappers	1.10	"	—

Twines

All Prices Nominal
(F. o. b. Mill)
(Soft Fiber)

Coarse Polished—			
India	.21	@	—
White Hemp	.21	"	—
Fine Polished—			
Fine India	.26	"	—
Unpolished—			
Box	.17½	"	—
Paper Makers	.17	"	—
Tube Rope	.19	"	—
Wall Paper	.20½	"	—
Wrapping	.21	"	—
Soft Fiber Rope	.19	"	—
Cotton	.25	"	—
(Hard Fiber)			
Medium Java	.18	"	—
Mex. Sisal	.16	"	—
Manila	—	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill)

Shirt Cuttings—	
New White No. 1	.07¼
New White No. 2	.05¼
Light Silesias	.05¼
Black Silesias, soft	.03¼
New Unbleached	.07½
Washable Prints	.04¼
Washable No. 1	.03
Blue Overall	.05½
Cottons—According to grades—	
Washable Shredding	.01¼
Fancy Percales	.04¼
New Black Soft	.03¼
Khaki Cuttings—	
Unbleachable Cotton Cuttings	.03½
Bleachable Cotton Cuttings	.04¼
Men's Corduroy	.03½
Women's Corduroy	.03
Serges	.03¼

Domestic Rags (Old)

White No. 1—Repacked	3.80	@	—
Miscellaneous No. 1	3.20	"	—
Miscellaneous No. 2	2.65	"	—
White No. 2—Repacked	2.90	"	—
Thirds and Blues—			
Miscellaneous	1.80	"	—
Repacked	2.20	"	—
Black Stockings—			
(Export)	Nominal		
Roofing Stock—			
Foreign No. 1	Nominal		
Domestic No. 1	1.55	"	—
Domestic No. 2	1.45	"	—
Roofing Bagging	1.35	"	—
Old Manila Rope	5.75	"	—

Bagging

(F. o. b. Phila.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.00	@	3.50
No. 1 Clean bright—			
Sisal Strings	.04	"	—
No. 2 Clean bright—			
Sisal Strings	.03	"	—
Sisal Jute	.02½	"	.02¾
Scrap—			
No. 1	3.25	"	3.50
No. 2	1.75	"	1.80
Wool Tares, heavy	4.00	"	4.25
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.75	"	4.00

Old Papers

(F. o. b. Phila.)
OPA Maximum Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
Soft White Shavings, one cut	2.50	"	—
White Blank News	1.65	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 White Ledger	2.30	"	—
No. 2 Ledger, colored	2.00	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
Overissue Magazines	1.67½	"	—
New Manila Envelope Cuttings	2.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.95	"	—
Box Board Cuttings	.72½	"	—
Kraft Corrugated Cuttings	2.25	"	—
Old Corrugated Containers	1.40	"	—
Overissue News	1.00	"	—
No. 1 News	1.00	"	—

BOSTON

Old Papers

(F. o. b. Boston)
OPA Maximum Prices, Baled

No. 1 Hard White Shavings, unruled	2.87½	@	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White and Colored Tabulating Cards	2.25	"	—
Ground Wood Tabulating Cards	1.35	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.95	"	—
Overissue News	1.10	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	2.75	@	2.90
Sisal Rope No. 1	*4.75	"	—
Sisal Rope No. 2	*	— "	4.00
Mixed Rope	—	"	1.55
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope	4.50	"	5.00
Jute Carpet Threads	3.00	"	3.50
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	3.00	"	3.25
South American	—	"	3.25
Wool Tares—			
Foreign	(nominal)		
Domestic	4.25	"	—
Aust. Wool Pouches	—	"	3.63
New Zealand Wool Pouches	—	"	3.50
New Burlap Cuttings	4.75	"	5.00
Heavy Baling Bagging	4.00	"	4.25
Paper Mill Bagging	2.50	"	3.00
No. 2 Roofing Bagging	1.35	"	—

*OPA Maximum Prices.

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.04½	@	.04¾
Fancy Percales	.04¼	"	.05
New White No. 1	.06¾	"	.07
New Light Flannelettes	.05½	"	.06
Canton Flannels, Bleached	.06	"	.06¼
Underwear Cutters, Bleached	.06¾	"	.06¾
Underwear Cutters, Unbleached	.05¾	"	.06
Silesias No. 1	.06	"	.06¼
New Black Silesias	.03	"	.03¼
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached	.06½	"	.06¾
Blue Cheviots	.05½	"	.06
Fancy	.02¾	"	—
Washable	.02¾	"	—
Khaki Cuttings	.02¾	"	.03
O. D. Khaki	.03½	"	.03¾
Corduroy	.03¾	"	.03½
New Canvas	.06¼	"	.06½
B. V. D. Cuttings	.06¾	"	.06½

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	3.80	@	—
Miscellaneous	3.20	"	—
White No. 2—			
Miscellaneous	2.65	"	—
Twos and Blues, Repacked	2.20	"	—
Old Blue Overalls	2.25	"	2.50
Thirds and Blues, Repacked	2.20	"	—
Miscellaneous	1.80	"	—
Black Stockings	3.50	"	4.00
Roofing Stock—			
No. 1	1.55	"	—
No. 2	1.45	"	—
No. 3	1.35	"	—
No. 4	1.35	"	—
No. 5, Quality A	1.35	"	—
Quality B	1.30	"	—
Quality C	.95	"	—
Old Manila Rope	5.75	"	—

*OPA Maximum Prices.

Foreign Rags

(F. o. b. Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)
OPA Maximum Prices, Baled

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
No. 1 White Ledger	2.30	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
White Blank News	1.65	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
No. 1 Assorted Old Kraft	1.75	"	—
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
No. 1 Mixed Paper	.95	"	—
No. 1 Roofing Rags	1.55	"	—
No. 1 Roofing Bags	1.45	"	—

The Trade-Mark of

DEPENDABLE FELTS

The Waterbury Felt Co.

SKANEATELES FALLS, N. Y.

In a mill producing facial or other tissues calling for gentle handling of the web, which winders or rewinders give the best service?

CAMACHINES OF COURSE !!!

CAMERON MACHINE COMPANY 61 POPLAR ST., BROOKLYN 2, N. Y.
MIDWEST OFFICE: 111 W. MONROE ST., CHICAGO 3, ILL.

PENNOTEX OIL CORPORATION

29 Broadway
New York, N. Y.

AMORPHOUS WAXES
Melting Points 120° F. to 205° F.

For the Manufacture of

LAMINATING PAPER . . GLASSINES . . WATER-PROOFING . . GREASE PROOFING . . EXTENDERS FOR PARAFFIN, FOOD CONTAINERS, CONTAINER LININGS, ADHESIVENESS AND PROTECTIVE COATING.

A TYPE AND SIZE FOR EVERY NEED IN MILL, FINISHING ROOM, CONVERTING PLANT

SAMUEL M. LANGSTON COMPANY, Camden, New Jersey

ROTOGRAVURE PRESSES

for PACKAGE PRINTING
PAPER PROCESSING
SPECIALIZED PRINTING

ROTOGRAVURE ENGINEERING CO.
DIVISION MILLER PRINTING MACHINERY CO., PITTSBURGH.
299 MARGINAL ST. EAST BOSTON, MASS.

For High-Speed, Dependable

PAPER CONVERTING MACHINES

contact

POTDEVIN

Paper Bag Machines, Aniline & Oil-Ink Presses, Waxing, Gluing, Varnishing, Laminating Machines.

POTDEVIN MACHINE CO.
EST. 1893
1223 38th ST. BROOKLYN N. Y.

POTDEVIN

THE HAYDEN WIRE WORKS, INC.

Manufacturers of

BRONZE and BRASS WIRE CLOTH

West Springfield, Mass.
Cylinder Covering a Specialty

Have you tried LOOMFIBRE

a

FINE WHITE FIBROUS INERT FILLER
for
PATENT COATED, WAXING, BLOTTING, PITCH CONTROL

W. H. Loomis Talc Corp. Gouverneur, N. Y.

Prepare NOW to Take Care of Increased Orders

Which Will Come. Consider Necessary Repairs and Maintenance.

Also New Equipment of Improved Designs and Efficiency.

PAPER BAG MACHINERY—PAPER MACHINES
THE NEW MODEL "E" PAPER TRIMMERS

THE SMITH & WINCHESTER
MANUFACTURING COMPANY
Plant and Offices at South Windham, Connecticut

MISCO "C"
THE CORROSION RESISTANT ALLOY

CAST • ROLLED • FABRICATED
for all equipment exposed to corrosion by sulphite acids
MICHIGAN STEEL CASTING CO., DETROIT 7, MICH.

HELP WANTED

CHARLES P. RAYMOND SERVICE INC.
294 Washington St., Boston, Mass.
Specializing in Paper Mill Personnel
Positions Now Open

Plant Engineer to take full charge of all plant engineering, maintenance and construction work, steam and electric power
Sales Manager kraft papers and boards
Chief engineer (Power) mid-west mill
Designers and draftsmen for paper mills and firms building paper mill machinery
Technical trained chemist to take charge control department
Superintendent, also supervisors for tissue mills
Tour Boss (several)
Chemists and physicists
Superintendent for fine papers
Superintendent and tour boss for roofing felt
Master mechanics and plant engineers—salaries up to $6500 year
Superintendent ground pulp and paper mill
Machine tenders, back tenders, beater engineers, 3rd and 4th hands and many others

We invite correspondence (strictly confidential with employers seeking personnel and men seeking new positions. S-20

PACKER: experienced in wrapping bundles of finished paper. Permanent position.

GUMMER: experienced operator of gumming machine manufacturing paper gummed tape. Permanent position.

MACHINE OPERATOR: experienced, sheeting paper and die cutting paper. Permanent position.

Address Box 45-595 care Paper Trade Journal. S-20

HERE'S AN INTERESTING JOB FOR SOME YOUNG CHEMIST

We are looking for a young chemist with two years or more of experience in industrial research, to do creative work in our packaging laboratory, to be a part of a growing organization. He should be energetic, ingenious, able to get along well with people. Occasional opportunity for field work. If this appeals to you, write us for an interview. R. F. Walter, Personnel Department, DEWEY AND ALMY CHEMICAL COMPANY, Cambridge 40, Massachusetts. N-22

ADJUSTER—Square, flats, specialty machines. Excellent opportunity with established firm. Give experience. Address Box 45-570 care Paper Trade Journal. S-20

FOREMAN to take charge of paper tube winding department. Located in New England. State experience. Address Box 45-568 care Paper Trade Journal. S-20

TOUR BOSSES wanted for Roofing Felt Mills located in New Orleans and Metropolitan New York Area. Send complete resume giving experience, etc. to Box 45-565 care Paper Trade Journal. S-20

WANTED—Experienced Napkin and Toilet Perforating Machine Operators. Steady work. Overtime work if preferred. Northern New York. Address Box 45-581 care Paper Trade Journal. S-20

A CONVERTING PLANT with ideas for mechanical improvements, needs some special machine builder available now or near future. Address Box 45-549 care Paper Trade Journal. S-20

WANTED—Backtenders, Windermen and Beater Engineers for mill in Eaton, Indiana. Reply to Sangamon Paper Mills, 3915 S. LaSalle St., Chicago 9, Illinois. S-27

BAG MACHINE ADJUSTOR—Paper bag factory. Good pay. 40 hour week plus overtime. Address Box 45-591 care Paper Trade Journal. S-20

LARGE EXPORT CONCERN wants assistant with thorough knowledge paper branch. Knowledge Spanish preferred but not essential. Ex-serviceman preferred. Address Box 45-594 care Paper Trade Journal. S-27

WANTED—One man to represent an Eastern paper converting mill through New York State. We will prefer one who has had some experience in paper sales, and who resides in the vicinity of Syracuse, N. Y. Address Box 45-596 care Paper Trade Journal. D-20

WANTED—Draftsmen experienced in plant layout and building design; draftsmen for high pressure & process piping. New York City office. Address Box 45-577 care Paper Trade Journal. O-4

HELP WANTED

PLANT ENGINEER

To take charge of all plant engineering, maintenance and construction work, including steam and electric power plant. Must be thoroughly experienced, energetic, capable and reliable. Mill located in good midwest city. Give full particulars in first letter, including experience, references, availability and salary expected. Interview can be arranged at company expense and all replies will be treated confidentially. Box 45-590 care Paper Trade Journal. O-11

Wanted
ASSISTANT TO CHIEF ENGINEER

To take complete charge of our Power Plant supervising the operation and maintenance of high pressure boilers, turbines, and auxiliary equipment. Young man with both technical and practical background preferred. Excellent opportunity for growth in responsibilities. Give complete personal and business history in letter of application.

FORT HOWARD PAPER COMPANY
Green Bay, Wisconsin O-4

PAPER CHEMIST—For printing ink development in laboratory of large ink manufacturer. Prefer paper experience. Preferably under 35. No ink experience necessary. Excellent opportunity for advancment. Chicago area. Address Box 45-564 care Paper Trade Journal. S-27

CLASSIFIED ADVERTISING

HELP WANTED — 5c a word. Double rate for heavy face type. Minimum charge $1.25.

SITUATIONS WANTED — 5c a word, double rate for heavy face type. Minimum charge $1.25. If repeated ½ rate will be charged for each consecutive repetition.

FOR SALE — 5c a word. Double rate for heavy face type. Minimum charge $1.25.

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Classified advertising space may also be purchased at $3.00 per single column inch.

All classified advertisements are payable in advance.

If box number is used—35 cents additional.

Address Replies

to advertisements appearing under Box Numbers in care of

PAPER TRADE JOURNAL
15 West 47th Street
New York 19, N. Y.

HELP WANTED

MASTER MECHANIC

to take full charge of maintenance in Asphalt Roofing Plant. Western New York location. Excellent salary for the right man. Give full particulars in first letter. All replies in strictest confidence. Address Box 45-533, Paper Trade Journal. TF

A small converting plant near New York has an excellent opportunity for a man 30-45 with exceptional mechanical ability.

Must be industrious, neat and able to handle younger people well and more or less of a mechanical genius.

There is an excellent future, ample starting salary and pleasant suburban working conditions.

Give complete detailed information in your reply. Box 45-548 care Paper Trade Journal. S-20

SALARIED POSITIONS

$2,500-$25,000. Reconversion is creating lifetime opportunities now. This thoroughly organized confidential service of 35 years' recognized standing and reputation carries on preliminary negotiations for supervisory, technical and executive positions of the calibre indicated. Retaining fee protected by refund provision. Identity covered and present position protected. Send only name and address for details.

R. W. BIXBY, INC.
117 Delward Bldg., Buffalo 2, N. Y. TF

MACHINE TENDER for cylinder machine operations. Must be experienced at this particular kind of machine operations. Prefer high school graduate or equivalent. Address Box 45-293 care Paper Trade Journal. TF

WANTED — ENGINEERS — Capable of handling general engineering work in established consulting engineers office specializing in pulp and paper mills. Address Box 45-469 care Paper Trade Journal. TF

WANTED—Sales and Technical Service Representatives for New England and Middle Atlantic States to serve pulp and paper mills. Mill experience and bacteriological or chemical training desirable. Address Box 45-518 care Paper Trade Journal. S-20

MERCHANDISE AND SALES MANAGER for nationally known paper bag manufacturing company seeking to develop sales of special purpose and transparent bags and flexible containers—opportunity—replies considered in strictest confidence—state experience and minimum compensation. Our employees aware of this advertisement. Address Box 45-529 care Paper Trade Journal TF

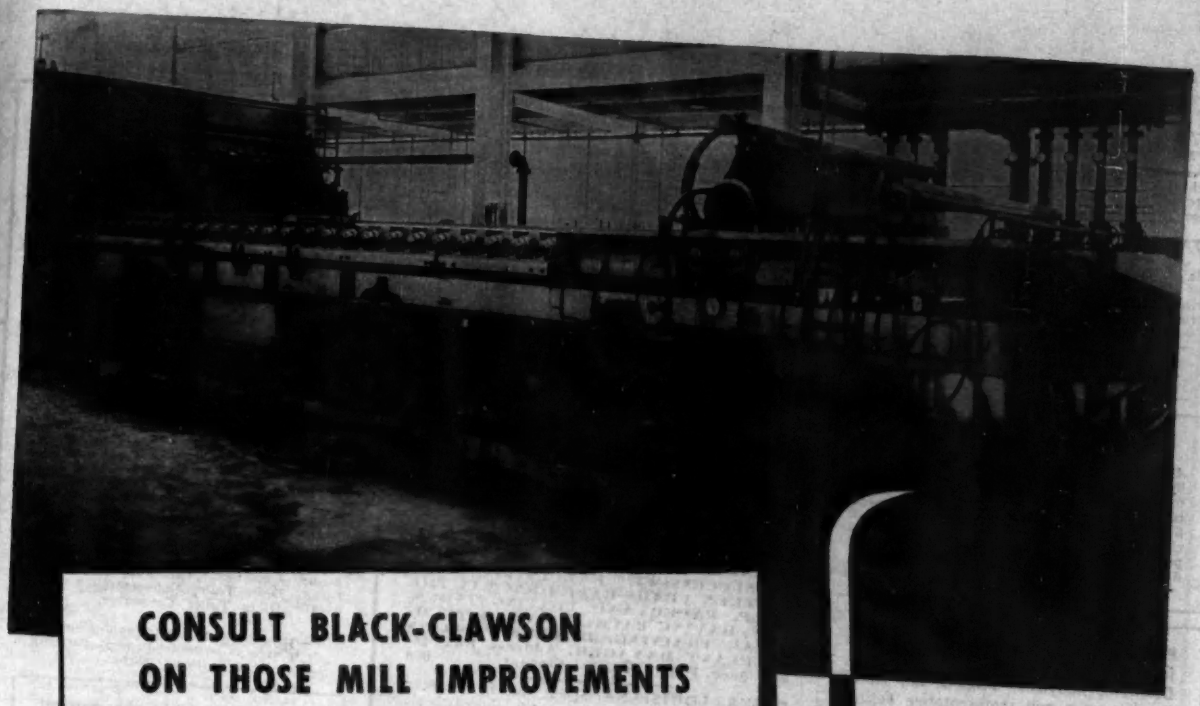
WANTED—Mechanical Engineering Draftsmen with several years experience in chemical plant layout, process equipment design, piping for chemical company in East. State age, experience, salary expected. Address Box 45-554 care Paper Trade Journal. S-27

WANTED—Tour Boss, Machine Tender, Back Tender, Shipping Clerk for one machine mill making folding grades. Extensive rebuilding program under way. Excellent opportunity for right men. Address Box 45-541 care Paper Trade Journal. O-25

WANTED—Chemical Manufacturer has openings for Chemists or Chemical Engineers with experience in the Pulp and Paper Industry. Graduate training in Chemistry, or experience in the paper converting, synthetic resins, or plastics fields would be helpful. Address Box 45-559 care Paper Trade Journal. S-27

MACHINE DESIGNER preferably with experience in paper mill or paper working machinery. Permanent position with good opportunity advancement. Location Brooklyn, New York. State complete details, age, experience and salary expected. Address Box 45-578 care Paper Trade Journal. TF

WANTED—Graduate Chemist with at least 1 yr. experience in a paper mill for research and development work in a well established chemical house in Western Pennsylvania. Excellent opportunity to get into Sales and Technical Service. Apply in own handwriting giving references, experience and personal history. Address Box 45-589 care Paper Trade Journal. O-11



CONSULT BLACK-CLAWSON ON THOSE MILL IMPROVEMENTS

Now that WPB's L-83 has been withdrawn you can win your "DSC" by spotting improvements to make about your mill—and the sooner the better.

Go forth and size up your pulping, your refining, your pumping and agitation. Are your chests adequate and properly located?

How is your paper machine doing? Does it need a "shot in the arm" at the forming end, the press, the dryer, the finishing end? And your drives!

On any and all of these points the Black-Clawson organization could be of service.

Should you even contemplate building an entire new machine Black-Clawson engineers stand ready to sit down with you, help work out special features, and estimate the cost.

Cylinder machines any size. Fourdrinier machines up to 240" for high-speed operation.

THE BLACK-CLAWSON CO., Hamilton, Ohio

Divs.: Shartle Bros. Machine Co., Middletown, Ohio
Dilts Machine Works, Fulton, New York
Associate: Alexander Flock, Limited, Ottawa, Canada

HELP WANTED

WANTED—Experienced adjuster and machine tender for Lockport and National Paper Bag Machines, for flat and square bags. Plant in western New York. Address Box 45-498 care Paper Trade Journal. S-20

WANTED—Manufacturing Agents for distribution of chemical product to pulp and paper mills. Several territories available in United States and Canada. Write fully on present lines and territory. Address Box 45-517 care Paper Trade Journal. S-20

SITUATIONS WANTED

ASSISTANT SUPERINTENDENT OR SUPERINTENDENT

Age 32. Jobs held—Fourth Hand to Spare Machine Tender, Assistant Superintendent. Technical education. Five years practical experience on book papers, plus five years in management, making kraft specialties, including creped. Fourdriniers. Dependable. Get along well with others. Address Box 45-555 care Paper Trade Journal. S-27

PAPER SALESMAN at present covering the jobbing trade in Pennsylvania, New Jersey, Delaware, Maryland, Virginia and North Carolina as a mill representative desires to operate over the same territory as a representative for three of four non-conflicting lines. Address Box 45-435 care Paper Trade Journal. O-25

PAPER MILL ENGINEER MILL SUPT.

20 years various mills. Experienced all phases administration, production, operation, development, reconstruction. Good organizer. Desires change. Personal reasons. Seeking opportunity to manage mill. Replies confidential. References. Address Box 45-566 care Paper Trade Journal TF

AVAILABLE — SALESMAN. Considering change, Thirty years manufacturing, ditributing, selling, fine papers and other grades, seeks connection with mill or reputable jobber. Address Box 45-521 care Paper Trade Journal. S-20

SUPERINTENDENT or Assistant Superintendent—15 years experience in supervision, production, quality, maintenance and technical control on all grades of box boards. Address Box 45-597 care Paper Trade Journal. S-20

MANAGER OR ASSISTANT — Technically educated. Eight years experience in manufacture of asbestos paper and millboard on multiple cylinder machines. Four years as mill manager. Good on cost, production, and handling men. Would consider superintendent. Address Box 45-545 care Paper Trade Journal. S-20

PLANT ENGINEER with long experience in pulp and paper mill engineering, construction and maintenance, also operation of electrochemical and power plants. Address Box 45-580 care of Paper Trade Journal. O-4

BEATERROOM SUPERINTENDENT or foreman, 55 years old. 35 years theoretical and practical experience on most kinds of paper. Good on color. Address Box 45-484 care Paper Trade Journal. S-20

SITUATIONS WANTED

SALES REPRESENTATIVE—With long experience in pulp and paper field. Available immediately to a good organization. University education. Age 45. Can give to a firm both high type and forceful representation. Address Box 45-567 care Paper Trade Journal. S-27

PURCHASING AGENT—Veteran of World War I and II, with 20 years experience purchasing and contracting for lumber, pulp and paper mills, and for Army, open for position requiring responsibility and initiative. Familiar with rail and water transportation, salvage sales, handling personnel. Address Box 45-574 care Paper Trade Journal. S-27

PERSONNEL DIRECTOR—Broad industrial experience. B.A. and L.L.B. Degrees. Extensive union negotiations background. Experienced in all phases employer-employee relationships including job evaluations etc. Address Box 45-561 care Paper Trade Journal. O-11

CHEMIST—Technical graduate with B.S. in Pulp and Paper Technology. Experienced in research and development with fine papers. Seeks position with progressive pulp, paper or allied company. Address Box 45-575 care Paper Trade Journal. S-20

AVAILABLE AS PLANT MANAGER—SUCCESSFUL EXECUTIVE WITH FIFTEEN YEARS EXPERIENCE IN THE PULP, PAPER AND COATING INDUSTRY, HAVING BACKGROUND OF TECHNICAL TRAINING, DESIRES POSITION AS PLANT MANAGER. Address Box 45-583 care Paper Trade Journal. O-4

TEXAS-LOUISIANA. Spade work in this market for quality printing paper should begin now. Write resident, 32, college graduate, publicity and graphic arts experience, to discuss sales representation. Address Box 45-585 care Paper Trade Journal. O-11

SALESMAN—Familiar with the converting trade and large users of sulphate paper in New England. Would like to contact mill wishing to be represented in this area. Address Box 45-588 care Paper Trade Journal. S-27

POSITION WANTED as TOUR BOSS on cylinder board. 42 years old and married. Available at once. Address Box 45-587 care Paper Trade Journal. S-27

ENGINEER-CHEMIST —EXPERIENCED IN THE PAPER INDUSTRY, IS AVAILABLE FOR POSITION AS TECHNICAL OR RESEARCH DIRECTOR WITH RELIABLE FIRM IN THE PAPER, CELLULOSE OR PLASTICS FIELD. THIS MAN TRAINED IN CHEMISTRY, PHYSICS AND CHEMICAL ENGINEERING. HAS HAD FIFTEEN YEARS EXPERIENCE IN THE PAPER, PULP AND PRINTING INDUSTRIES. Address Box 45-584 care Paper Trade Journal. O-4

FOURDRINIER EXECUTIVE—Now in consulting work on the Pacific Coast, will shortly be available for permanent connection on fine papers. Reconversion, personnel, developing profitable market. Intimate knowledge of papermaking. Complete supervision required. Salary and tonnage arrangement. Results guaranteed. Address Box 45-600 care Paper Trade Journal. S-27

FOR SALE

PAPER COATING MACHINERY — Waxing, Oiling, Gumming, Gluing, Carbon, Laboratory Coating and Treating Machines. High speed. New improvement. MAYER MACHINE COMPANY, Inc., 1155 Scottsville Road, Rochester, 11, N. Y. TF

FOR SALE

FOR SALE

1—Saveall 36" x 136" Cylinder Mold equipped with anti-friction bearing and couch roll.
1—Valley Iron Screw Press.
1—120" Fourdrinier Wet End.
1—#2 Miami Jordan.
1—#9 Emerson Jordan for direct connection to a motor, requires use of 400 H.P. motor.
1—Shartle Brothers Duplex 10 x 20 Stock Pump.
1—Moore & White 10 x 12 Triplex Stock Pump.
2—2000 lb. Holyoke Beaters.
1—1000 lb. Dayton Beater.
1—Jones pulper — direct connected to 60 H.P. motor.
2—12 Plate Packer type flat screens with steel vats.
2—8 Plate Flat Screens.
1—12 Plate Flat Screen.
1—18 Plate Flat Screen with scraper.
13—Driers 60" x 154".
1—Buffalo Pump—5500 g. p. m., direct connected to 100 H.P. Motor (50' head).
1—#4 Roots-Connersville Vacuum Pump.
2—65" Cameron tensions for winders.
2—63" Dietz Toilet Converters.
1—81" Dietz Toilet Converter.

Various sizes of Centrifugal Pumps. Write us regarding your particular requirements.

We are always in the market to purchase your surplus or idle machinery. What have you to offer?

J. J. ROSS COMPANY
250 Frelinghuysen Ave.
Newark 5, N. J.
Bigelow 3-3720 S-20

LIQUIDATION

Scott Quadruple Effect Evaporator, 2500 sq. ft. each effect, vertical steel tubes; 40—Agitator Headers for Tanks from 10' to 22' dia.; 15—Centrifugal Pumps, from 2" to 8"; 50—Motors, 10 to 150 HP, 3/60/440 volt, 490 to 860 RPM; 2—Rotary Kilns 6' x 60'; Steel Bins; Belt Conveyors; Tanks; Bucket Elevators; Pipe; Shaftings; etc. Located near Pittsburgh, Pa. Full list upon request.

BRILL EQUIPMENT COMPANY
225 W. 34th Street, New York 1, N. Y.
S-20

FOR SALE—Motor, Slip Ring, Type I Form M 695 Speed, 75 H.P., 3 phase cycle, 440 volts, General Electric, Serial 1009090, subject to prior sale. May be inspected at Schneider Elec. Co., 1 Mercer St., N.Y.C. If interested write to Park Tissue Mills, 303 Fifth Ave., N.Y.C. S-13

FOR SALE **FOR SALE** **FOR SALE**

ROSS PAPER MACHINERY CO., 17 Porter Ave., Newark, New Jersey

Waverly 3-5675

2 Iron Firemen Stokers complete with undergrate fans, fly-ash fans, Fairbanks Scale Co. weight lory, portable coal conveyor and portable car unloader. All the above is complete with motors and starters. Purchased new 1944 used one year.

Additional information on request. S-20

FOR SALE | FOR SALE | FOR SALE

Ross Paper Machinery Co., 17 Porter Ave., Newark 8, New Jersey, Waverly 3-5675

48" Single Cylinder Machine with all auxiliaries.

Additional Information on request.

BEATERS
1—2500 lb. Downingtown Iron Tub
1—750 lb. Downingtown Iron Tub
2—1000 lb. Horne Iron Tub
1—1200 lb. Holyoke Wood Tub

CALENDER STACKS
1—10 Roll Farrell 104" Warren Doctors
1—11 Roll Pusey & Jones 104" Warren Doctors

CONVERTING EQUIPMENT
1—Bliss Double Head Stitcher
1—Bliss Single Head Stitcher
1—Bliss Box Assembling Machine
1—66" Dietz Towel Winder
4—Waterville Grinders
1—42" Parry Liner & Combiner
1—36" Waldron Reeling Machine
1—39" Dampening Machine
1—36" Brush Coating Machine
1—Copper Mixing Tank with agitator—40 gal.
1—Cast Iron Kettle 20" x 24" 2 outlets

DRYERS
19—36" diam. x 68" face—2 deck frames, gears, bearings, etc.
5—48" diam.—102" face—2 deck frames.
40—36" diam. 86" face 3 deck frames
18—36" diam. 82" face 2 deck frames
40—28" diam. 96" face 2 deck frames

FESTOON DRYERS
100" Proctor & Schwartz
60" Proctor & Schwartz

FLAT SCREENS
1—Moore & White 8 Plate
1—Moore & White 10 Plate
2—Sandy Hill Packer 8 Plate with Scrapers.
1—Sandy Hill Packer 10 Plate
1—Trimbey Pulp Screen 30 ton cap.

JORDANS
1—E. D. Jones Standard motor drive
1—Dillon No. 2 Motor drive
1—Appleton No. 2 motor drive
1—Noble & Wood Monarch Belt Drive

KNIFE GRINDER
1—72" Seybold automatic used one year

MISCELLANEOUS
1—Warren Broke Target with pump
2—Yankee Dryer doctor oscillators (Beloit)
2—Nugent Oil Filters (new)
2—Beloit Fourdrinier Shakes

MOTORS
1—30 h.p. 600 R.P.M. 2300 V. 3 Ph. 60 cy.
1—40 H.P. 3600 R.P.M. 2300 V. 3 Ph. 60 cy.

PLATERS
2—Holyoke 2 Roll 18" dia. 36" face

PULP EQUIPMENT
2—Pusey & Jones vertical Digesters (welded) 7' dia., 24' high 125 lb. pressure
8—Horizontal Digesters 13' diam. 47' face 150 lb. pressure
3—Improved No. 2 Knotters
1—Nichols-Herreshoff Lime Kiln
1—Williams No. 30 Bark Hog
1—Sumner Disc Barker 72" dia.

PULPERS
1—Sturtevant Bale Pulper with conveyor & motors used three years.
1—Voith Pulper No. 1-20 tons cap.

PUMPS
1—Pusey & Jones 5" x 8" Stock.
1—DeLaval 6" x 6"
1—Oliziti Acid 3" Suction.
1—Frederick 600 g.p.m. 50' head (stock)
1—Midwest 6" stock pump

REELS
2—Pusey & Jones 104" face 18" dia. bowls
1—Pusey & Jones 115" face 18" dia. bowls
1—3-bowl 100" face 20" dia. bowls

RIGHT ANGLE WORM GEAR DRIVES
1—Cleveland 2 H. P.—10 to 1 ratio.
1—Philadelphia 15 H. P.—60 to 1 ratio.
1—Oliver 5 H. P.—51 to 1 ratio.
1—Grant 2 H. P.—34¼ to 1 ratio.
1—Cleveland 2.3 H. P.—40 to 1 ratio.
1—Cleveland 1.2 H. P.—60 to 1 ratio.
1—Grant 2 H. P.—7 to 1 ratio.
1—Philadelphia 2 H. P.—600 to 1 ratio.
1—Philadelphia 15 H. P.—60 to 1 ratio.

SATURATOR
1—Guyton-Cumfer 3 gates

SAVEALL
1—A. D. Wood cylinder 48" dia. 60" face
1—No. 4 Bird with motor and speed reducer 16" diam. rubber couch.

SHEET CUTTER
120" Hamblet Duplex with layboy and 24 roll backstand.

SLITTERS & WINDERS
1—104" Warren two drum.
1—72" Pusey & Jones two drum.
2—42" Cameron 36—20 slitters with motors.
2—50" Cameron 36—20 slitters with motors.

STUFF PUMPS
1—12" x 12" Goulds triplex
8—10" x 20" Shartle triplex
1—8" x 18" Shartle triplex
1—12" x 16" Shartle triplex
1—8" x 10" Shartle triplex
1—7" x 16" Shartle triplex
1—8" x 18" Shartle duplex

TWISTING MACHINE
1—36 Spindle Brownell Twister with motor.

UNWINDERS
1—52" Johnstone Uniform Tension Unwinder with auto, hydraulic brakes. Used 6 months.
1—42" John Waldron Unwinder. Used 1 year.

VACUUM PUMPS
1—14" x 20" Connersville
1—12" x 18" Connersville

WASHERS (Beaters)
1—54" face—45" diam. with rigging
1—52" face—52" diam. with rigging

WET MACHINE
1—84" Improved three roll Hydraulic Enclosed drive (used one year)

AMERICA'S LARGEST BUYERS OF PAPER MAKING MACHINERY
WANTED—THREE CYLINDER AND TWO FOURDRINIER MACHINES FOR EXPORT—ANY WIDTH

FOR SALE

1—Standard Horne Jordan with new shell and plug fillings.
1—12" wide Shartle & Bovis Tissue Paper Shredder, Shredding ¼" wide strips.
1—¼ fold Hudson Sharp Napkin Machine.
1—110" Moore & White Model #4-DW-18, Double Drum Slitter and Rewinder complete with motors.
1—7-roll 48" wide Holyoke Super Calender Stack, complete with 60 H.P. G. E. a.c. 3 phase 60 cycle, 220 volt motor equipment. Machine in perfect condition.
1—#2 Lamoyo Pulper complete with 40 H/P A.C. motor equipment. A-1 condition.
1—110" Double-Drum Waldron late type shear cut hydraulic Slitter and Rewinder.
1—Type FC International Folding Paper Box Machine Co.'s Folding and Gluing Machine. Range of sizes on folded cartons 2½" to 10" when folded flat and 3" to 30" long.
1—45" up-to-date Beck Rotary Sheet cutter complete with automatic Beck Layboy.
1—34" up-to-date practically new Waldron Embossing Machine with leather design.
1—19" x 37" Standard Sheridan Die Press with motor. Rebuilt and guaranteed.

GIBBS-BROWER COMPANY, INC.
21 East 40th St., New York 16, N. Y.
TF

FOR SALE

36" Diameter Dryers 85" and 86" Face — 3 Deck — Complete with Stands, Gears and Bearings.

EMPIRE BOX CORPORATION
Garfield, New Jersey
TF

FOR SALE

1—Yankee Fourdrinier machine with 10' x 98" dryer
1—144" Pulp Drying Machine
1—120" fourdrinier machine

SHARTLE BROS. MACHINE CO.
Middletown, Ohio
S-28

REVAMPING AND BUILDING MILL AND CAN OFFER FOR SALE

One large Breaker Beater complete
One small Beater Complete
1—60" Diameter X 90" Face cylinder mold
1—8x8 Shartle Duplex plunger stock pump
1—New pair cast steel double suspension spring type beater bearings for 5" diameter journal —Noble & Wood beater roll. Never used
1—Used old style lighter beam for 5" diameter journal Noble & Wood beater
1—New reinforced design lighter beam for 5" diameter journal—Noble & Wood beater roll. Pattern No. 663. Never used.
1—200 KVA —23000-2300/4000 volts transformers
1—250 H.P. slip ring motors & controls—450 R.P.M.—3 bearing base and pulley
96—62" Face steel dryer felt rolls—1—7/16" journals
1—36" Face cast iron taper pulley—2 15/16" bore taper 31"x29½"
4—36" diameter x 83" face dryers
1—6" to 10" Cox & Sons Pipe threading machine
1—42"x40" Noble & Wood beater roll with filling installed
1—36" Noble & Wood Impeller for circulation stock in beater.
A visit to the mill would prove profitable as we have many items for sale to numerous to mention. See our superintendent Mr. O. P. Fennell at our plant in Walloomsac, New York.

WALLOOMSAC PAPER MILLS, INC.
Mills: Walloomsac, New York
Main Office: 25 Vanderbilt Avenue
New York 17, New York
TF

4—Duplex 4 x 10 stuff pumps arranged for motor drive. Operated 3 years.

Box No. 45-552 care Paper Trade Journal. S-27

FOR SALE

GASOLINE MOTOR
HYDRAULIC LIFT TRUCK
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FOR SALE

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FOR SALE—30 x 48 Kidder roll feed Three Color Press, printing from a roll 9,000 an hour and rewinds. Address Box 45-598 care Paper Trade Journal. O-4

WANTED

WANTED

4—12 Pinto Flat Screens
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1—Sahr Refiner 16", 18" or 20"
2—Synchronous Motors, 150 HP and 200 HP
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Advise condition, price and location for inspection. Address Box 45-582 Care Paper Trade Journal. S-27

WANTED — DISCARDED PAPER MILL FELTS. HIGHEST PRICES paid for all kinds of discarded paper mill felts. LARGE or SMALL QUANTITIES accepted. Prices quoted immediately on receipt of samples. ADDRESS GLASER AND YOFFE, INC., 80 NORTH MAIN ST., NATICK, MASS. TF

WANTED—Brightwood Box Machine. Address Box 44-836 care Paper Trade Journal. tf

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WANTED

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Postevin Machine Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Weber, Herman G.

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Valley Iron Works Co.

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Shartle Brothers Machine Co.
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Valley Iron Works

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Graton & Knight Company
The Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc.
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Worthington Pump & Machinery Corp.

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Pennsylvania Salt Co.
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Shartle Brothers Machine Co.

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Walworth Company

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Smith & Winchester Mfg. Co.
Valley Iron Works
Waldron Corp., John

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Dilts Machine Works
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Shartle Brothers Machine Co.

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Rotogravure Engrg. Co.
The Sandy Hill Iron & Brass Works
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United States Rubber Co.
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J. J. Ross Company
Ross, J. O. Engineering Corp.
Rotogravure Engrg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Traylor Engineering & Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

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Noble & Wood Machine Co.
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Shartle Brothers Machine Co.
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Waldron Corp., John

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Noble & Wood Machine Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

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Dilts Machine Works, Inc.
Hamblet Machine Co.
E. D. Jones & Sons Co.
Simonds Worden White Co.
Valley Iron Works Co.

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Dilts Machine Works
E. D. Jones & Sons Co.
Leeds & Northrup Company
National Technical Laboratories
Noble & Wood Machine Co.
Taber Instrument Co.
Taylor Instrument Companies
Valley Iron Works Co.

LAY BOYS
Hamblet Machine Co.
Moore & White Co.
Shartle Brothers

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General Electric Co.
Ingersoll-Rand Co.
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Johnson Corporation
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PACKING
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United States Rubber Co.

PAPER MACHINES
Black-Clawson Company
Downingtown Mfg. Co.
Thomas W. Hall Co.
Moore & White Co.
Pusey & Jones
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester

PAPER MACHINE SLICES
Black-Clawson Company
E. D. Jones & Sons Co.
Montague Machine Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

PAPERMILL BUILDERS
Merritt Chapman & Scott Corp.

PAPER TUBE MACHINERY
Dietz Machine Works
Thomas W. Hall Co.
Hudson Sharp Machine Company
Langston Co., Samuel M.

PASTING MACHINES
Black-Clawson Company
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Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John

PERFORATED METAL
Allis-Chalmers Mfg. Co.
Harrington & King Perforating Co.
Hendrick Mfg. Co.

PIPE
Black-Clawson Company
Crane Company
Grinnell Company
Shartle Brothers Machine Co.
Stowe-Woodward Inc.
Taylor Forge & Pipe Works
Walworth Company
Youngstown Welding & Engrg. Co.

PLATERS
Perkins & Son, Inc., B. F.

PLATES
Black-Clawson Company
Hendrick Mfg. Co.
J. O. Ross Engrg. Corp.
Shartle Brothers Machine Co.
Timken Roller Bearing Co.

PLUGS
Black-Clawson Company
E. D. Jones & Sons Co.
The Noble & Wood Machine Co.
Shartle Brothers Machine Co.

PRESSES
Black-Clawson Company
Farrel-Birmingham Co.
Dietz Machine Wks.
Thomas W. Hall Co.
Hudson-Sharp Machine Co.
Paper Converting Machine Co., Inc.
Potdevin Machine Co.
Rotogravure Engineering Co.
Shartle Brothers
Valley Iron Works Co.
Waldron Corp., John
Weber, Homer C.

PUG MILLS
Taylor Engineering & Mfg. Co.

PULPS
Andersen Co., J.
Bulkley, Dunton Pulp Co., Inc.
Gottesman & Co., Inc.
Elof Hansson, Inc.
Perkins-Goodwin Co.
Price & Pierce, Ltd.
Pulp and Paper Trading Co.

PUMPS
Allis-Chalmers Mfg. Co.
Black-Clawson Company
Dorr Company
Downingtown Mfg. Co.
De Laval Steam Turbine Co.
Frederick Iron and Steel Co.
Hills-McCanna Co.
Ingersoll-Rand Co.
Johnson Corp.
Moore & White Co.
Nash Engineering Co.
Noble & Wood Machine Co.
Paper Converting Mch. Co.
Quimby Pump Co. Div. of H. K. Porter Company, Inc.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Warren Steam Pump Company
Worthington Pump & Machinery Corp.

RECOVERY SYSTEMS
Bulkley, Dunton Pulp Co., Inc.
Rodney Hunt Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Pusey & Jones
Ross Engineering Corp. J. O.
Valley Iron Works Co.

RECTANGULAR BINS
Taylor Engineering & Mfg. Co.

REELS
Black-Clawson Company
Downingtown Mfg. Co.
De Laval Steam Turbine Co.
Hudson Sharp Machine Company
The Kohler System Company
Montague Machine Co.
Moore & White Co.
Paper Converting Mch. Co.
Rodney Hunt Machine Co.
Rotogravure Engrg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
The Smith & Winchester Mfg. Co.

REFINERS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
Bauer Brothers Co.
Dilts Machine Works
The Hermann Manufacturing Co.
E. D. Jones & Sons Co.
Murray, D. J. Mfg. Co.
Noble & Wood Machine Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Sprout, Waldron & Co.
Sutherland Refiner Corp.
Valley Iron Works

REGULATORS
Allis-Chalmers Mfg. Co.
Armstrong Machine Works
Bird Machine Company
The Bristol Company
The Brown Instrument Co.
The Foxboro Company
Jones, E. D., & Sons Co.
General Electric Co.
Johnson Corp.
Leeds & Northrup Company
National Technical Laboratories
Noble & Wood Machine Co.
Shartle Brothers
Stickle Steam Specialties Co.
Taylor Instrument Companies
Wallace & Tiernan
Westinghouse Electric Corporation

RESINS
American Cyanamid & Chemical Corp.
American Resinous Chemicals Corp.
The Resinous Products & Chemical Co.

ROLLS
Appleton Machine Co.
Black-Clawson Company
Downingtown Mfg. Co.
Farrel-Birmingham Co.
Improved Paper Machy. Corp.
Lobdell Co.
The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.
Montague Machine Co.
D. J. Murray Mfg. Co.
Noble & Wood Machine Co.
Perkins, B. F., & Sons Co.
Pusey & Jones Corp.
Roehlen Engraving Co.
J. J. Ross Company
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Shenango-Penn Mold Co.
Sinclair Co.
Smith & Winchester Mfg. Co.
Stearns Magnetic Mfg. Co.
Stowe-Woodward Inc.
United States Rubber Co.
Valley Iron Works Co.
Waldron Corp., John

ROLL COVERS
The Cincinnati Rubber Mfg. Co.
Stowe-Woodward Inc.
Youngstown Welding & Engrg. Co.

ROLL STANDS
Cameron Machine Co.
Johnstone Eng. & Machine Co.
The Kohler System Company
Moore & White Co.
Potdevin Machine Co.
Rotogravure Engrg. Co.
Shartle Brothers Machine Co.

ROTARY KILNS
Traylor Engineering & Mfg. Co.

SATURATING MACHINES
Black-Clawson Company
Moore & White Co.
Noble & Wood Machine Co.
Potdevin Machine Co.
Rotogravure Engrg. Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman C.

SCALES
Builders-Providence, Inc.
Merrick Scale Mfg. Co.

SCREEN PLATES
Pitchburg Screen Plate Co.
Magnus Metal Corp.
Morey Paper Mill Supply Co.
Union Machine Co.
Union Screen Plate Co.

SCREENS
Allis-Chalmers Mfg. Co.
Appleton Wire Works
Appleton Machine Co.
Bird Machine Company
Carthage Machine Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Harrington & King Perforating Co.
Hendrick Manufacturing Co.
E. D. Jones & Sons Co.
Montague Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Traylor Engineering & Mfg. Co.
Valley Iron Works Co.

SCRUBBERS
Traylor Engineering & Mfg. Co.

SHEET MACHINES
Thomas W. Hall Co.
The Hermann Manufacturing Co.
Noble & Wood Machine Co.
Rotogravure Engrg. Co.
Valley Iron Works Co.

SHOWER PIPES
Bird Machine Company
A. E. Broughton & Co.
Downingtown Mfg. Co.
Improved Paper Machy. Corp.
Moore & White Co.
Shartle Bros. Mach. Co.
Smith & Winchester Mfg. Co.

SHREDDERS
Bauer Brothers Co.
Carthage Machine Co.

SIZING
American Cyanamid & Chemical Co.
American Resinous Chemicals Corp.
Black-Clawson Company
The Dow Chemical Co.
du Pont, E. I., de Nemours & Co.
National Oil Products Co.
Paper Makers Chemical Department, Hercules Powder Co.
Pioneer Salt Company
Socony-Vacuum Co.
Philadelphia Quartz Co.

SLITTERS
Black-Clawson Company
Cameron Machine Co.
Carthage Machine Co.
Dietz Machine Works
Downingtown Mfg. Co.
Thomas W. Hall Co., Inc.
Hamblet Machine Co.
Hudson Sharp Machine Company
Johnstone Eng. & Machine Co.
Langston Co., Samuel M.
Moore & White Co.
D. J. Murray Mfg. Co.
Potdevin Machine Co.
Rotogravure Engrg. Co.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

SPRAY NOZZLES
The Spray Engineering Co.

STAINLESS STEEL
Allegheny Ludlum Steel Co.
Eastern Stainless Steel Corp.
Industrial Steels, Inc.

STARCH
American Cyanamid & Chemical Corp.
Clinton Co.
National Starch Products, Inc.
Stein, Hall & Co., Inc.

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STEAM SPECIALTIES
Johnson Corp.
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

STRAPPING & STRAPPING MACHINES
Acme Steel Company
The Stanley Works

STUFF CHESTS
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

SUCTION BOXES
Black-Clawson Company
A. E. Broughton & Co.
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Westinghouse Electric Corp.

SULPHUR
American Cyanamid & Chemical Corp.
Stauffer Chemical Company
Texas Gulf Sulphur Co.
Witco Chemical Company

SULPHUR BURNERS
Valley Iron Works Co.

TALC
American Cyanamid & Chemical Corp.
W. H. Loomis Talc Corp.
International Talc Company

TANKS
Frederick Mfg. Co.
E. D. Jones & Sons Co.
Kalamazoo Tank & Silo Co.
The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.
The Noble & Wood Machine Co.
H. K. Porter Company Inc.
Rodney Hunt
J. O. Ross Engrg. Corp.
Shartle Brothers Machine Co.
Stowe-Woodward Inc.
Traylor Engineering & Mfg. Co.
United States Rubber Co.
Waldron Corp., John
Youngstown Welding & Engrg. Co.

THICKENERS, DECKERS & SAVEALLS
Bird Machine Company
Bulkley, Dunton Pulp Co. Inc.
Carthage Machine Co.
Dilts Machine Works
Dorr Co.
Downingtown Mfg. Co.
Montague Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

TITANIUM
E. I. Du Pont de Nemours & Co.
Titanium Pigment Co.
R. T. Vanderbilt Co.
Witco Chemical Company

TOOLS
Acme Steel Company
Ingersoll-Rand Co.
The Stanley Works
Walworth Company

TRUCKS
Automatic Transportation Co.
Elwell Parker Electric Co.
Wright-Hibbard Ind. Elec. Truck Co.

TRAPS
Armstrong Machine Works
Crane Co.
Grinnel Company
Johnson Corporation
Shartle Bros. Mch. Co.

TUBS
Rodney Hunt Machine Co.
Noble & Wood Machine Co.
Shartle Brothers
Valley Iron Works Co.

TURBINES
Allis-Chalmers Mfg. Co.
De Laval Steam Turbine Co.
General Electric Company
Hunt, Rodney, Mach. Co.
Westinghouse Electric Corp.
Worthington Pump & Machinery Corp.

USED EQUIPMENT
Frank H. Davis Company
Gibbs-Brower Co.
Thomas W. Hall Co.
Noble & Wood Machine Co.
Rotogravure Engrg. Co.
J. J. Ross Company
Shartle Brothers Machine Co.

VALVES
The Bristol Company
Crane Company
Dilts Machine Works
Fibre Making Processes, Inc.
The Foxboro Company
Hills-McCanna Co.
E. D. Jones & Sons Co.
Kennedy Valve Mfg. Co.
Magnus Metal Corp.
D. J. Murray Mfg. Co.
Noble & Wood Machine Co
The Permutit Company
William Powell Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Stickle Steam Specialties Co.
Taylor Instrument Companies
Valley Iron Works Co.
Walworth Company

VATS & VAT PARTS
Union Machine Co.
Union Screen Plate Co.

WASHERS
Bird Machine Company
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Rodney Hunt Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

WATER CONDITIONING
The Permutit Company

WAXING MACHINERY
Black-Clawson Co.
Potdevin Machine Co.
Rotogravure Engrg. Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

WELDING EQUIPMENT
Allis-Chalmers Mfg. Co.
General Electric Company
Walworth Company
Westinghouse Electric Corp.

WET MACHINES
Black-Clawson Co.
Carthage Machine Co.
Downingtown Mfg. Co.
Moore & White Co.
Montague Machine Co.
Noble & Wood Machine Co.
Pusey & Jones Corp.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

WINDERS AND REWINDERS
Black-Clawson Company
Cameron Machine Co.
Dietz Machine Works
Downingtown Mfg. Co.
Thomas W. Hall Co.
Hudson-Sharp Mach. Co.
Langston Co., Samuel M.
Johnstone Eng. & Machine Co.
The Kohler System Company
Montague Machine Co.
Moore & White Co.
Paper Converting Mch. Co.
Potdevin Machine Co.
Pusey & Jones Corp.
Rotogravure Engrg. Co.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Waldron Corp., John

WIRES
Appleton Wire Works
Black-Clawson Company
Bulkley, Dunton Pulp Co. Inc.
Cheney Bigelow Wire Works
Hayden Wire Works
International Wire Works
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Squeeze Play

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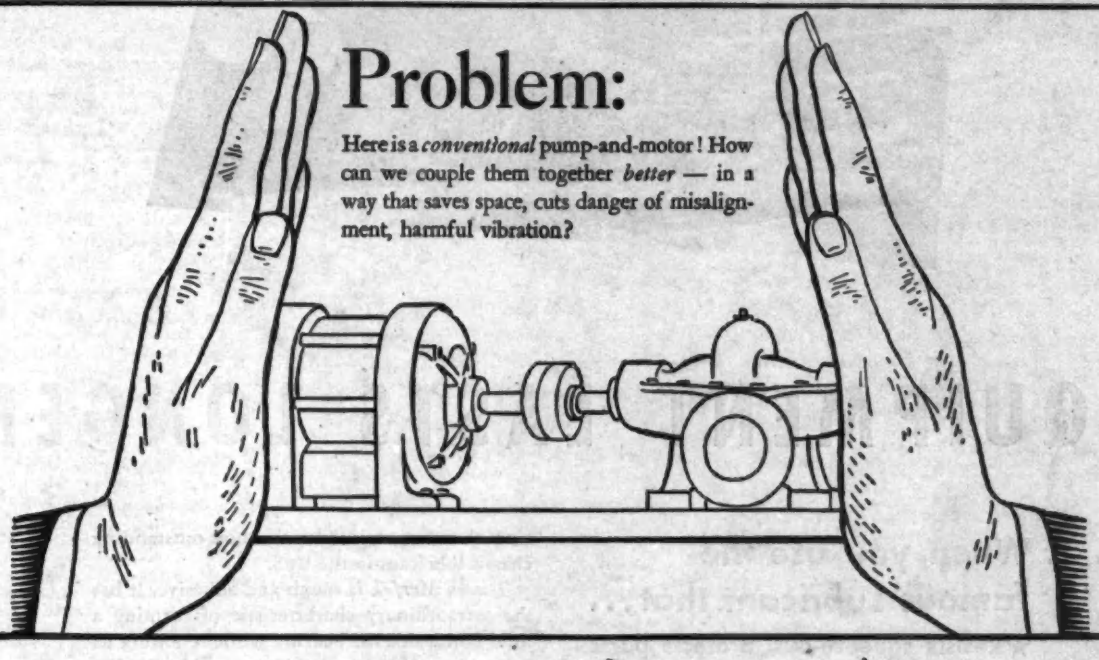

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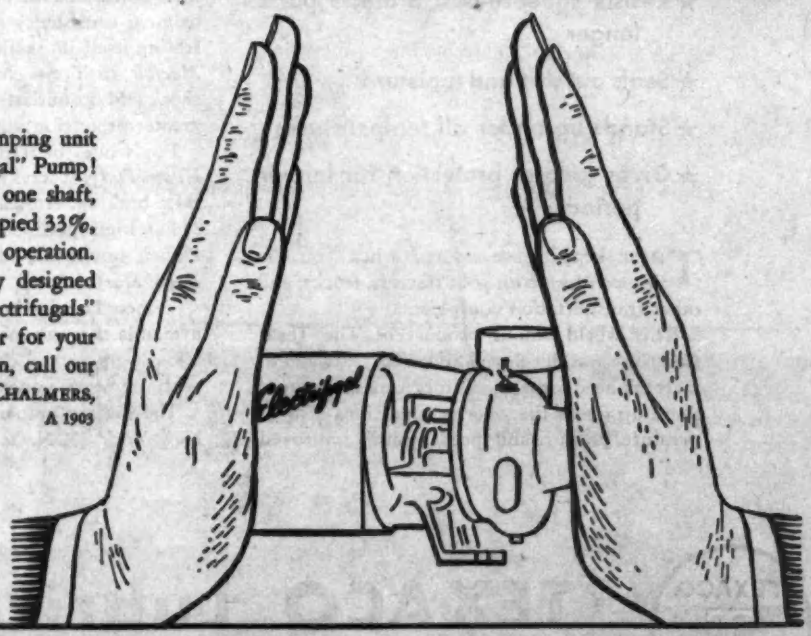

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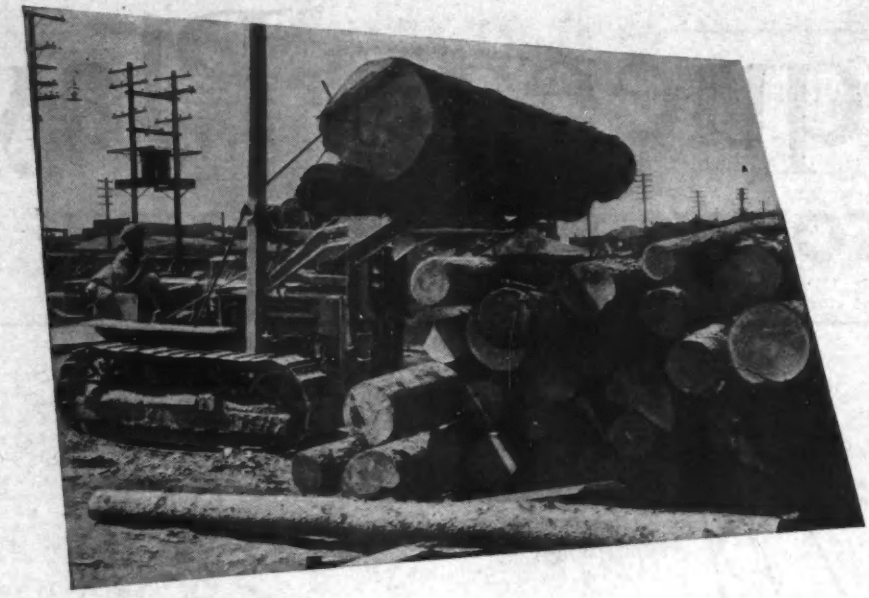

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